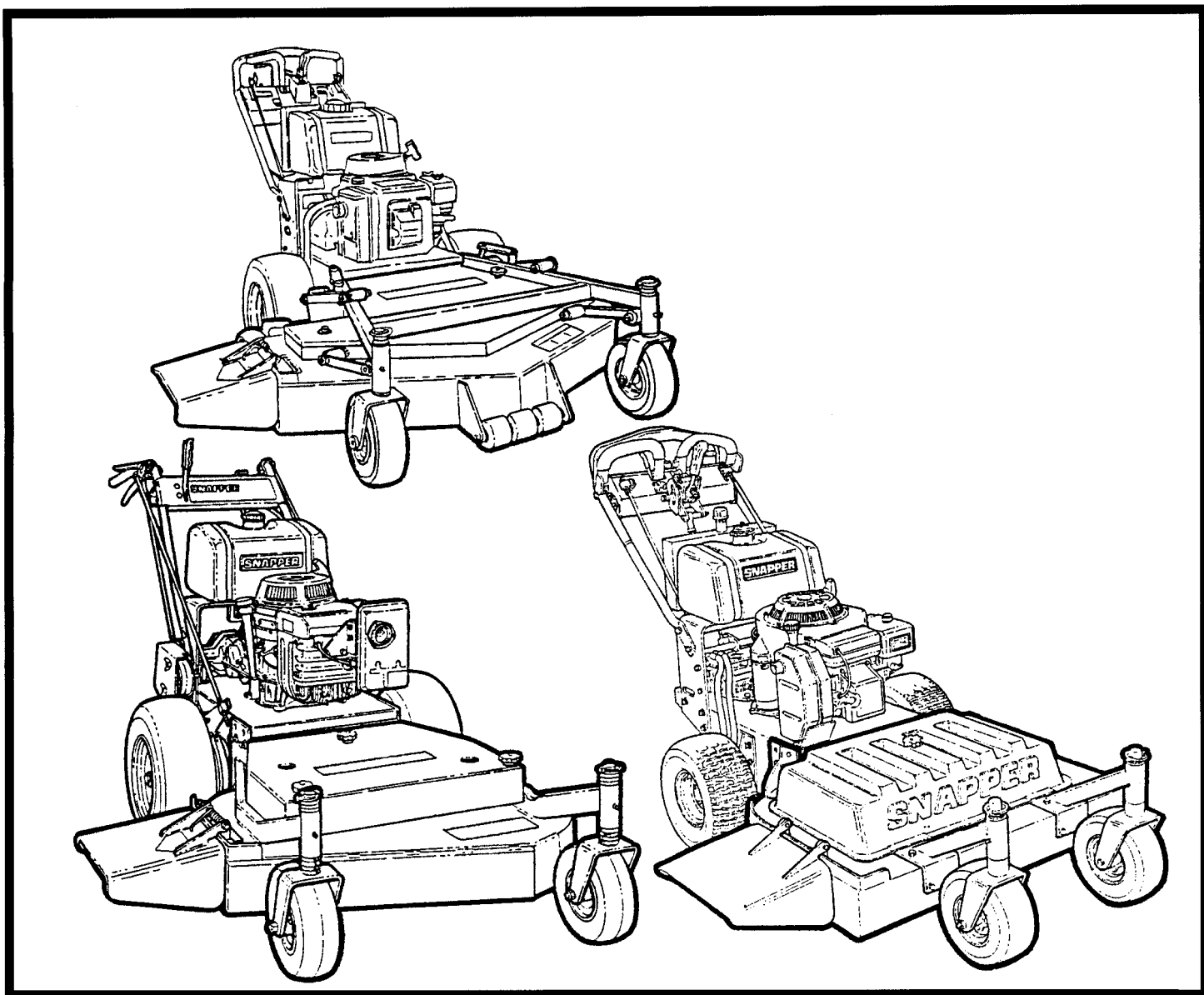


# **SNAPPER<sup>®</sup>**

## **PRO Mower Units Series 0 thru Series 4**



## **SERVICE MANUAL**

**SNAPPER<sup>®</sup>** McDonough, GA., 30253 U.S.A.

# **SERVICE MANUAL**

## **for SNAPPER PRO Mower Units Series 0 thru Series 4**

### **TABLE OF CONTENTS**

<b>Section I - General Information . . . . .</b>	<b>1.1 - 1.6</b>
<b>Section II - Troubleshooting . . . . .</b>	<b>2.1 - 2.4</b>
<b>Section III - Caster, Wheel &amp; Tire Assemblies. . . . .</b>	<b>3.1 - 3.6</b>
<b>Section IV - Cutter Assemblies. . . . .</b>	<b>4.1 - 4.10</b>
<b>Section V - Mower Units &amp; Components . . . . .</b>	<b>5.1 - 5.16</b>
<b>Section VI - Deck Idler Assemblies &amp; Blade Brakes . . . . .</b>	<b>6.1 - 6.6</b>

### **IMPORTANT**

For optimum Cutting Performance, all Mower Units should be 1/4" to 3/8" Lower in Front after leveling and adjustments.

# **Section I**

# **GENERAL**

# **INFORMATION**

---

## **CONTENTS**

<b><u>ITEM</u></b>	<b><u>PAGE No.</u></b>
Model Identification Lists . . . . .	1.2
Model Number Explanations . . . . .	1.3
Master Profiles . . . . .	1.4 - 1.5
Introduction . . . . .	1.6
How To Use This Manual . . . . .	1.6
WARNINGS & CAUTIONS . . . . .	1.6
TOOL REQUIREMENTS . . . . .	1.6
GENERAL WORKSHOP SAFETY HINTS . . . . .	1.6
SPECIFICATIONS - TORQUE VALUES . . . . .	1.6

# Section I - GENERAL INFORMATION

## 1.1 MODEL IDENTIFICATION LISTS

The following lists identify the SNAPPER Mower Units covered in this manual. Also, the lists separate the Mower Units according to the type Power Unit they are used on - i.e., Gear Drive or Hydro. Please note there is no coverage given to the Power Units - they are in separate manuals which are available from SNAPPER or NOVA.

### **SERIES 0 (1991 PRODUCTION)** **MOWER UNITS**

PMA7360  
PMA7480

### **SERIES 0 (1992 PRODUCTION)** **MOWER UNITS**

PMA7360  
PMA7480

### **SERIES 1 & 2 (1993 PRODUCTION)** **MOWER UNITS**

PMA7361  
PMA7362  
PMA7481  
PMA7482

### **SERIES 4 (PRE-1995 PRODUCTION)** **MOWER UNITS**

PMA7364  
PMA7484  
PMA7524  
PMHA7364  
PMHA7484

#### **NOTE**

See Page 1.3 for Model Number Explanations.

1.2 These lists begin with coverage of those Mower Units used on the PRO Series 0 thru 4 which were produced from 1991 thru late 1994 and conclude with the PRO Series 0.

The "Master Profiles" which list the year of production for the Mower Units and their compatible Power Units are shown on Pages 1.4 & 1.5.

### **SERIES 0 (1995 PRODUCTION)** **MOWER UNITS**

SPA360	SP320 (SPP90KW ONLY)
SPA480	SP360
SPA520	SP480
SPA610	SP520

### **SERIES 0 (1996 PRODUCTION)** **MOWER UNITS**

SPA360	SP320 (SPP90KW ONLY)
SPA480	SP360
SPA520	SP480
SPA610	

### **SERIES 0 (1997 PRODUCTION)** **MOWER UNITS**

SPA360	SP320 (SPP90KW ONLY)
SPA480	SPE360
SPA520	SP480
SPA610	

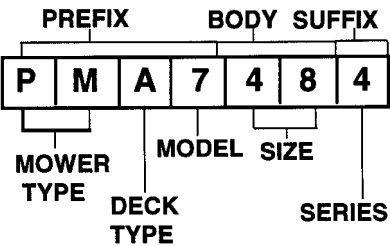
### **SERIES 0 (1998 PRODUCTION)** **MOWER UNITS**

SPA360	
SPA480	SPE360
SPA520	SPE480
SPA610	

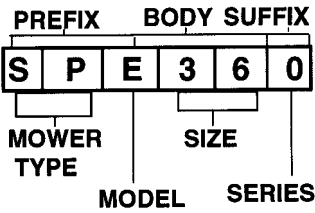
# Section I - GENERAL INFORMATION

## 1.3 MODEL NUMBER EXPLANATIONS

### EXAMPLE 1



### EXAMPLE 2



### PREFIX EXPLANATION

S - Snapper Commercial Walk Behind Mower  
E - Express Model  
  
P - PRO Series  
H - Hydro (Power Unit)

M - Mower Unit  
A - Adjustable Deck (The absence of the letter "A" indicates a Fixed Deck)  
7 - Model (As in "EXPRESS")

### BODY EXPLANATION

32 - 32" Cutting Width  
36 - 36" " "  
48 - 48" " "

52 - 52" Cutting Width  
61 - 61" " "

### SUFFIX EXPLANATION

0 - Series 0  
1 - Series 1  
2 - Series 2

4 - Series 4

# Section I - GENERAL INFORMATION

## 1.4 MASTER PROFILES FOR MODELS BUILT FROM 1995 THRU 1998

### PRO HYDRO COMMERCIAL WALK BEHIND - '95

POWER UNITS	MOWER UNITS
SPLH140KW - 80898	SPA360 - 80908
SPLH140KH - 80899	SPA480 - 80909
SPLH160BV - 80914	SPA520 - 80910
SPLH180KHE - 80901	SPA610 - 80911
Literature Pack - 5-3950 Operator Manual - 2-9049 Dealer Set-Up - 2-9048 Parts Manual - 06926	

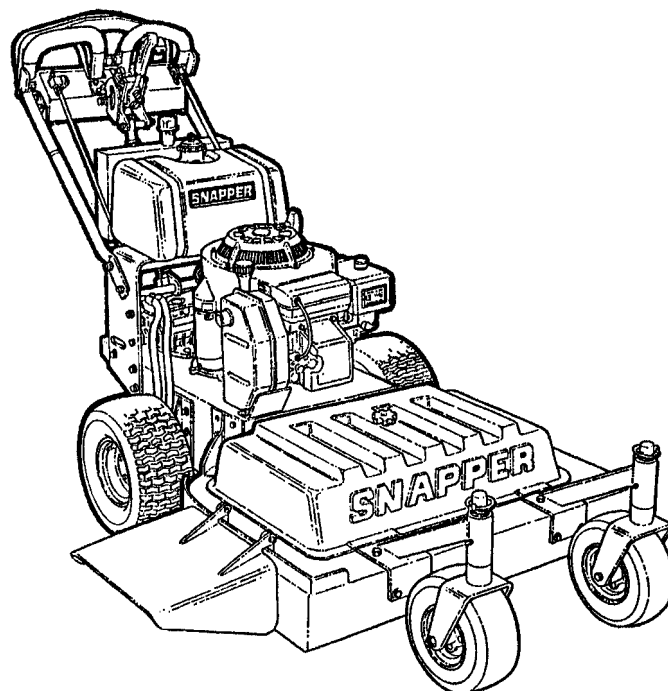
### PRO HYDRO COMMERCIAL WALK BEHIND - '96

POWER UNITS	MOWER UNITS
1) SPLH140KW - 80898	SPA360 - 80908
2) SPLH140KH - 80899	SPA480 - 80909
3) SPLH160BV - 80914	SPA520 - 80910
4) SPLH180KH3 - 80901	SPA610 - 80911
1) Literature Pack - 5-3950 2) Literature Pack - 5-3959 3) Literature Pack - 2-9092 4) Literature Pack - 5-3961 Operator Manual - 4-3799 Dealer Set-Up - 2-9048 Parts Manual - 06926	

### PRO HYDRO COMMERCIAL WALK BEHIND - '97

POWER UNITS	MOWER UNITS
1) SPLH140KW - 80898	SPA360 - 80908
2) SPLH140KH - 80898	SPA480 - 80909
3) SPLH160BV - 80914	SPA520 - 80910
4) SPLH180KHE - 80901	SPA610 - 80911
1) Literature Pack - 5-3950 Operator Manual - 4-3799 Dealer Set-Up - 2-9048 Parts Manual - 06926 2) Literature Pack - 5-3959 Operator Manual - 4-3799 Dealer Set-Up - 2-9048 Parts Manual - 06926 3) Literature Pack - 2-9092 Operator Manual - 4-3799 Dealer Set-Up - 2-9048 Parts Manual - 06926 4) Literature Pack - 5-3961 Operator Manual - 4-3799 Dealer Set-Up - 2-9048 Parts Manual - 06926	

\* "NEW" in 99" Dealer Program



### PRO HYDRO COMMERCIAL WALK BEHIND - '98

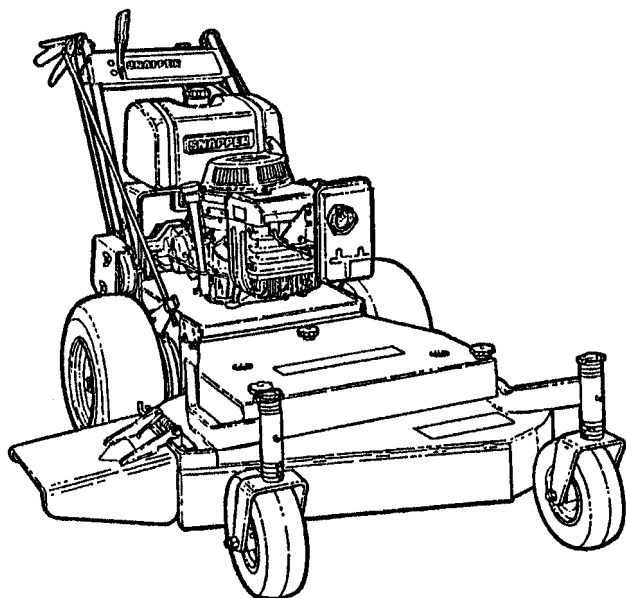
POWER UNITS	MOWER UNITS
1) SPLH140KW - 80898	SPA360 - 80908
* 2) SPLH140KWE - 84276	SPA480 - 80909
3) SPLH140KH - 80899	SPA520 - 80910
* 4) SPLH170KWV - 84275	SPA610 - 80911
5) SPLH180KHE - 80901	
* 6) SPLH220KHE - 84282	
1) Literature Pack - 5-3950 Operator Manual - 4-3799 Dealer Set-Up - 2-9048 Parts Manual - 06926 2) Literature Pack - 5-3950 Operator Manual - Dealer Set-Up - Parts Manual - 06 3) Literature Pack - 5-3959 Operator Manual - Dealer Set-Up - Parts Manual - 06 4) Literature Pack - 5-8697 Operator Manual - Dealer Set-Up - Parts Manual - 06 5) Literature Pack - 5-3961 Operator Manual - Dealer Set-Up - Parts Manual - 06 6) Literature Pack - 5-3961 Operator Manual - Dealer Set-Up - Parts Manual - 06	

# Section I - GENERAL INFORMATION

## 1.5 MASTER PROFILES FOR MODELS BUILT FROM 1995 THRU 1998

### PRO GEAR COMMERCIAL WALK BEHIND - '95

POWER UNITS	MOWER UNITS
SPP90KW - 80893	SP320 - 80904
SPP1250KW - 80894	SP360 - 80905
SPL1250KW - 82357	SP480 - 80906
SPP140KW - 80895	SP520 - 80907
SPL140KW - 82359	
SPP140KH - 80896	
SPL140KH - 82358	
SPP160BV - 80913	
SPL160BV - 82360	
<b>LITERATURE PACK</b> Operator Manual - 2-8970 Dealer Set-Up - 2-8964 Parts Manual - 06925	



### PRO GEAR COMMERCIAL WALK BEHIND - '96

POWER UNITS	MOWER UNITS
1) SPP90KW - 80893	SP320 - 80904
2) SPP1250KW - 80894	SP360 - 80905
2) SPL1250KW - 82357	SP480 - 80906
3) SPP140KW - 80895	
3) SPL140KW - 82359	
4) SPP140KH - 80896	
4) SPL140KH - 82358	
1) Literature Pack - 2-8987 2) Literature Pack - 2-8963 3) Literature Pack - 2-8982 4) Literature Pack - 2-8981 Operator Manual - 4-3798 Dealer Set-Up - 2-8964 Parts Manual - 06925	

### PRO GEAR COMMERCIAL WALK BEHIND - '97

POWER UNITS	MOWER UNITS
1) SPP90KW - 80893	SP320 - 80904
2) SPE1250KW - 82514	SPE360 - 82513
3) SPP140KW - 80895	SP480 - 80906
4) SPL140KW - 82359	
5) SPP140KH - 80896	
6) SPL140KH - 82358	
1) Literature Pack - 2-8987 Operator Manual - 4-3798 Dealer Set-Up - 2-8964 Parts Manual - 06925 2) Literature Pack - 5-9982 Operator Manual - 4-51992 Dealer Set-Up - 4-5202 Parts Manual - 06927 3) Literature Pack - 2-8982 Operator Manual - 4-3798 Dealer Set-Up - 2-8964 Parts Manual - 06925 4) Literature Pack - 2-8982 Operator Manual - 4-3798 Dealer Set-Up - 2-8964 Parts Manual - 06925 5) Literature Pack - 2-8981 Operator Manual - 4-3798 Dealer Set-Up - 2-8964 Parts Manual - 06925 6) Literature Pack - 2-8981 Operator Manual - 4-3798 Dealer Set-Up - 2-8964 Parts Manual - 06925	

### PRO GEAR COMMERCIAL WALK BEHIND - '98

POWER UNITS	MOWER UNITS
1) SPE1250KW - 82514	
* 2) SPE140KW - 84273	SPE360 - 82513
* 3) SPE150KH - 84400 or 84274	SPE480 - 84285
1) Literature Pack - 59982 Operator Manual - Dealer Set-Up - Parts Manual - 06 2) Literature Pack - 58186 Operator Manual - Dealer Set-Up - Parts Manual - 06 3) Literature Pack - 58185 Operator Manual - Dealer Set-up - Parts Manual - 06	

\* "NEW" in 99" Dealer Program

# Section I - GENERAL INFORMATION

## INTRODUCTION

### 1.6 HOW TO USE THIS MANUAL

This manual contains the Service and Maintenance information required to properly inspect, service and repair the MOWER UNITS for the SNAPPER PRO Series 0 thru 4.

The manual is divided into sections for quick, easy reference. Carefully read all procedures described for servicing a particular component **BEFORE** repairs are started, to avoid needless disassembly.

#### NOTE

References to the RIGHT and LEFT sides are determined by facing forward while standing behind the Mower Unit.

### 1.7 WARNINGS & CAUTIONS

Details of standard workshop safety procedures are not included in this manual. WARNINGS & CAUTIONS occur where procedures, if improperly performed, could cause personal injury, and/or damage to the unit or its components. These WARNINGS & CAUTIONS do not cover all conceivable ways hazardous consequences could be created by improperly following the instructions or by the incorrect use of service tools.

### 1.8 SERIAL NUMBER LOCATION

The Unit Serial Number is located on the Mower Deck in different places; according to Unit Model.

### 1.9 TOOL REQUIREMENTS

The normal complement of U.S. Standard tools found in most repair shops are all that will normally be needed to repair **SNAPPER PRO Mower Units**. Special tools are mentioned where needed in the manual. Refer to the specified Parts Manual for special tools available through **SNAPPER Dealers**.

#### NOTE

Throughout the following sections of this manual, the word "Unit" will be used (in most cases) in lieu of **PRO Mower Unit**.

### 1.10 GENERAL WORKSHOP SAFETY HINTS

- A. DO NOT run engine in an enclosed area - exhaust fumes are hazardous to your health.
- B. DO NOT smoke, light a fire or create any sparks near gasoline - it is extremely flammable.
- C. DO NOT use gasoline as a solvent. Fumes are dangerous. Always use non-flammable solvents.
- D. DO NOT store gasoline in an area where sparks or flames are present such as near water heaters or furnaces - gasoline fumes are extremely explosive.

E. ALWAYS disconnect the spark plug wire and secure the end away from the plug **BEFORE** inspecting, servicing or repairing the unit or attachments. Precautions prevent accidents such as unintentional start-ups!





F. ALWAYS make adjustments and do repairs in a well-lit and well-ventilated area.

G. ALWAYS wear protective safety goggles when using pressurized air to clean the machine or parts and also, when sharpening mower blades.

H. DO NOT use a jack to support the unit in a raised position. Use a chain hoist, "jack stands" or other stable supports that will hold up BOTH sides of the frame at the same time. This approach is especially important when raising and supporting the rear end of the unit. With the Mower Unit attached, the front caster wheels will pivot - therefore, both sides of the rear deck must be securely supported. Be sure to chock (block) the wheels that remain on the surface.

### 1.11 SPECIFICATIONS - TORQUE VALUES

Standard Torque Specifications and Capscrew Markings Chart. The values given here are based on the use of clean and dry threads. Reduce torque by 10 percent when threads are lubricated with engine oil

CAPSCREW HEAD MARKINGS				
Manufacturer's Marks may vary. Three-line markings on heads shown below - for example, indicate SAE Grade 5.				
				
SAE 1 or 2	SAE 5	SAE 6 or 7	SAE 8	
CAPSCREW BODY SIZE Inches - Thread	SAE 1 or 2 Torque Ft - Lb	SAE 5 Torque Ft - Lb	SAE 6 or 7 Torque Ft - Lb	SAE 8 Torque Ft - Lb
1/4 - 20	5	8	10	12
- 28	6	10		14
5/16 - 28	11	17	19	24
- 24	13	19		27
3/8 - 16	18	31	34	44
- 24	20	35		49
7/16 - 14	28	49	55	70
- 20	30	55		78
1/2 - 13	39	75	85	105
- 20	41	85		120
9/16 - 12	51	110	120	155
- 18	55	120		170
5/8 - 11	83	150	167	210
- 18	95	170		240
3/4 - 10	105	270	280	375
- 16	115	295		420



# Section II

# TROUBLESHOOTING

## CONTENTS

<u>ITEM</u>	<u>PAGE No.</u>
Troubleshooting Chart . . . . .	2.2
Service & Lubrication Chart . . . . .	2.3
Blade Belt Chart . . . . .	2.4

## Section II - TROUBLESHOOTING

### MOWER UNIT TROUBLESHOOTING CHART

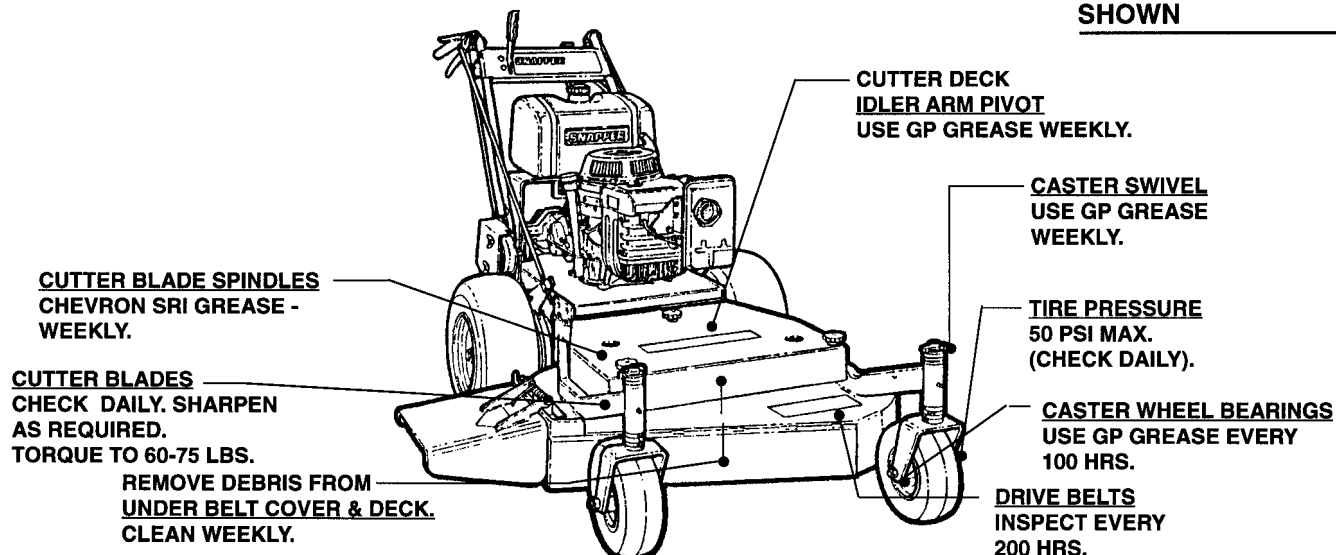
SYMPTOM	PROBLEM	SOLUTION
Mower Unit mows unevenly.	<p>Unequal number of Blade Spacers on Cutter Shafts or Caster Wheels.</p> <p>Mower Deck improperly adjusted.</p> <p>Low or no Air Pressure in Caster Tire.</p> <p>Mower Blades are dull.</p> <p>Blade Belt is slipping.</p> <p>Blade Spindle is binding.</p> <p>Blade Spindle Pulley height is out of adjustment.</p>	<p>Install equal number of Spacers.</p> <p>Mower Deck should be 1/4" to 3/8" Lower in Front after adjustments. Fill Caster Tire to correct Air Pressure.</p> <p>Sharpen or replace Blades.</p> <p>Adjust Blade Idler.</p> <p>Repair/Replace Spindle.</p> <p>Check Pulley height. Adjust as required.</p>
Mower Unit not cutting full width.	<p>Broken or slipping Blade Belt.</p> <p>Dull, Damaged or Worn Blades.</p>	<p>Adjust/Replace Belt.</p> <p>Sharpen or replace Blades.</p>
Excessive dusting ("Blow-Out") when using Mulching Kit on 48", 52" & 61" Mower Units.	Dust skirts are adjusted too high on Mowing Deck.	Adjust dust skirts to a lower position on Deck.
PMA7362 (36" DECK) Excessive wear of blade belt.	Blade Belt running too low in Brake Belt Guide. Brake arm incorrectly installed.	Remove nyloc nut and brake arm. Reinstall brake arm on the brake belt guide <u>underneath</u> the idler arm.
Poor clutching and performance characteristics (Older PRO736 & PRO748 Mower Decks)	Production belts have a lesser quality of performance than recommended replacement belts.	<p>Replace engine to deck belts as recommended below.</p> <p>36" Deck - New Belt No. 29908</p> <p>48" Deck - New Belt No. 29907</p>
Excessive deck noise/vibration during mowing operation.	<p>Belt guide(s) loose or improperly installed.</p> <p>Blades worn, bent or broken</p> <p>Blade spindle problems.</p> <p>Broken deck idler or blade brake spring.</p> <p>Blade belt is slipping.</p> <p>Engine to deck belt "flutter" (or) Vibration. Belt support out of adjustment. Make sure there's (Older PRO736 &amp; PRO748 Mower Decks).</p>	<p>Remove hood &amp; check belt guides. Adjust, tighten or install correctly.</p> <p>Check blades. Sharpen, repair or replace.</p> <p>Check blade spindles. Lube, repair or replace as required.</p> <p>Remove hood &amp; check spring(s). Replace as required. (Use Part No. 7-2915, SPRING, Heavy, on SP480).</p> <p>Adjust blade belt idler.</p> <p>Adjust belt support as required. Also, check the Pulley on the Engine - make sure there's no "Wobble". (Use Part No. 6-3104, KIT, Vibration, on SP480 - 1998 Models &amp; Prior).</p>

## Section II - TROUBLESHOOTING

SERVICE & LUBRICATION			
HOURS	PROCEDURE	SERVICE	REFERENCE
BREAK-IN	Check all grease points.	Add grease as required.	(See Lubrication Chart).
	Check all fasteners.	Torque/tighten as required.	---
	Check Set Screws for proper tightness.	Tighten as required.	---
	Check tension of engine/deck belt.	Adjust belt idler.	Operator's Manual
	Check tension of blade deck belt.	Adjust belt idler.	Operator's Manual
DAILY	Check under belt cover on deck for buildup of debris.	Clean daily. Blow Out Weekly.	---
	Check condition of cutter blades.	Sharpen as required.	Operator's Manual
	Check caster wheel tire pressure.	Fill to proper PSI.	Operator's Manual
WEEKLY	Check tension of engine/deck belt.	Adjust belt idler.	Operator's Manual
	Check tension of blade deck belt.	Adjust belt idler.	Operator's Manual
	Grease caster swivel shaft.	Use GP grease.	---
	Grease idler arm pivot.	Use GP grease.	---
	Grease cutter blade spindles.	Use GP grease.	---
	Check all fasteners and set screws for tightness.	Torque/tighten as required.	---
EVERY 100 HRS.	Grease caster wheel bearings.	Use GP grease.	---
EVERY 200 HRS.	Inspect blade drive belts.	Adjust/Replace as required.	Operator's Manual.

**LUBRICATION CHART**

**SP360 MOWER UNIT SHOWN**



## Section II - TROUBLESHOOTING

	BLADE BELT CHART	
MOWER DECK/SERIES	BELT PART No.	DESCRIPTION
PMA7360 Series 0 PMA7361 Ser. 1 & 2 PMA7362 Ser. 1 & 2	29908 " "	Belt, 36" Deck " "
PMA7480 Series 0 PMA7481 Ser. 1 & 2 PMA7482 Ser. 1 & 2	29907 1-9205 "	Belt, Engine/Deck 48" Belt, Blade/Blade 48" " "
PMA7364 Series 4	2-9908	Belt, 36" Deck
PMA7484 Series 4	2-9907 1-9205	Belt, Engine to Deck Belt, Blade/Blade 48"
PMA7524 Series 4	2-7346 2-7347	Belt, Engine to Deck 52" Belt, Blade/Blade 52"
SP320 SP360	36403 35710	V-Belt, Deck Drive 32" " " " 36"
SP480 SP520	2-9261 2-9266	V-Belt, Secondary 48" (113" LG) " " 52" (120" LG)
SP480 SP520	2-9262 42813	V-Belt, Primary 48" (66" LG) " " 52" (69" LG)
SPA360	35710	V-Belt, Deck Drive 36"
SPA480 SPA520 SPA610	2-9261 2-9266 2-9268	V-Belt, Secondary 48" (113" LG) " " 52" (120" LG) " " 61" (128" LG)
SPA480 SPA520 SPA610	2-9262 42813 42735	V-Belt, Primary 48" (66" LG) " " 52" (69" LG) " " 61" (72" LG)
SPE360 Series 0	3-5710	V-Belt, Deck Drive 36"

# Section III

## CASTER, WHEEL & TIRE ASSEMBLIES

### CONTENTS

<u>ITEM</u>	<u>PAGE No.</u>
Introduction . . . . .	3.2
Replacing Roller Bearing . . . . .	3.2
Replacing Wheel/Tire/Tube . . . . .	3.2
Replacing Yoke/Caster Bushings. . . . .	3.2
Replacing Caster Supports (Fixed Height Decks). . . . .	3.3
Replacing Caster Supports (Adjustable Height Decks) . . . . .	3.3-3.4
Caster Support Repair. . . . .	3.4
Deck Frame Weldment Installation (Adjustable Height Decks). . . . .	3.4
Parts Sheet (Caster Wheel Assembly - Early 1991). . . . .	3.5
Parts Sheet (Caster Wheel Assembly - 1992 thru 1999). . . . .	3.6

### REFERENCE LITERATURE

<u>ITEM</u>	<u>PAGE No.</u>
#17525 (I.R. 1/91) . . . . .	21
#06920 (I.R. 1/92). . . . .	28-29
#06921 (I.R. 6/92). . . . .	21
#06921 (REV. 2, 7/93). . . . .	21
#06922 (I.R. 7/93). . . . .	29
#06924 (I.R. 1/95). . . . .	21
#06925 (I.R. 12/95). . . . .	18
#06927 (I.R. 10/97). . . . .	15

# Section III - CASTER, WHEEL & TIRE ASSEMBLIES

## INTRODUCTION

The Caster Wheel Assemblies are basically the same on all **PRO MOWER UNITS**. The major differences are the Caster Supports and the lack of height-adjusting spacers on those casters found on adjustable decks. Also, the tires on some models are foam-filled, while others use pneumatic tires with tubes. Air pressure on pneumatic types must be kept at 50 psi in each tire to promote even mowing.

To service the front Caster Wheel Assembly, raise the front of the deck to take the weight off the caster wheels and proceed as follows:

### 3.1 REPLACING ROLLER BEARING

- A. Remove 1/2" nyloc nut. See Figure 3.1.
- B. Pull 1/2 x 5-1/2" bolt out and remove tire assembly.

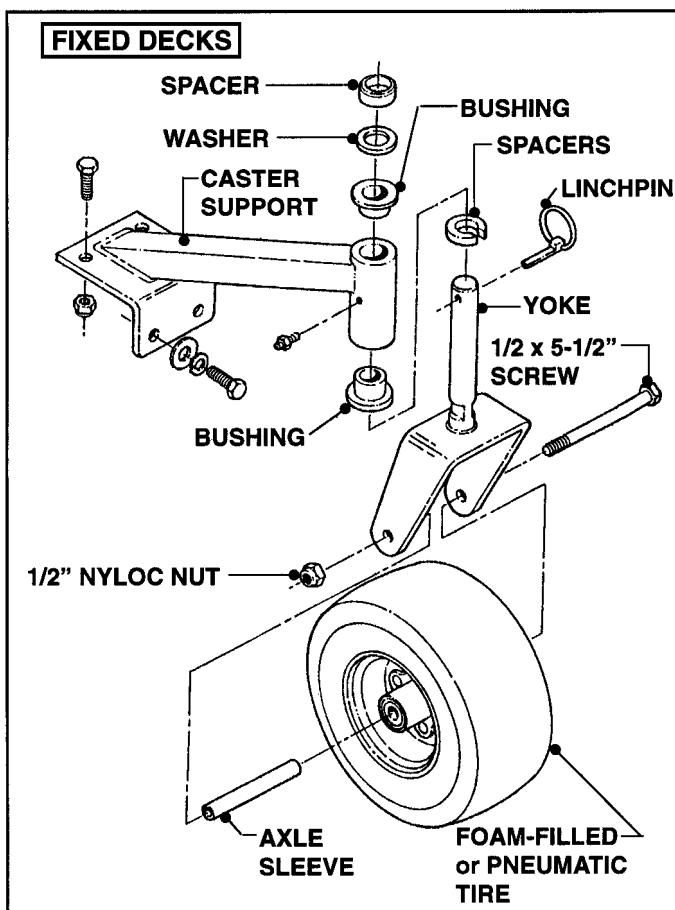


FIGURE 3.1

- C. Pull the axle sleeve out of the rim.
- D. Pull the flanged retainers out of the wheel hub or the rim. See Figure 3.2.
- E. Remove the roller bearing.
- F. Coat the new roller bearing with fresh bearing grease, then reassemble and reinstall caster wheel assembly in reverse order.

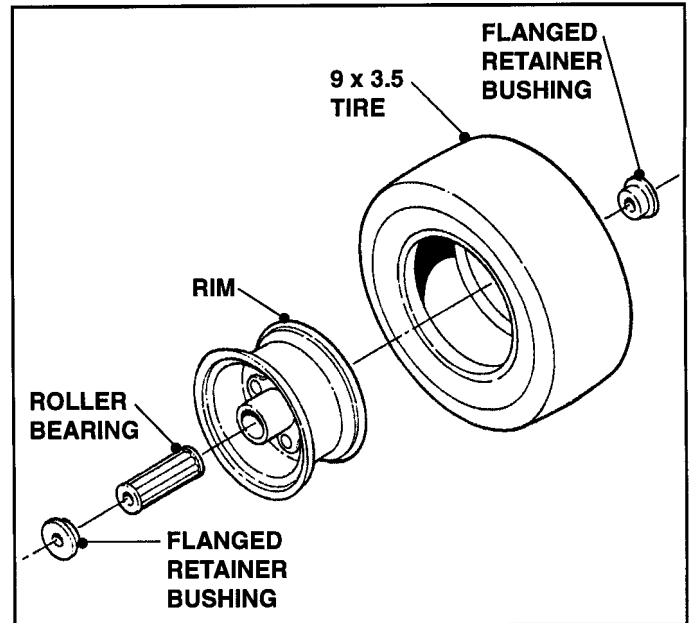


FIGURE 3.2

### 3.2 REPLACING WHEEL/TIRE/TUBE

- A. Remove 1/2" nyloc nut. Refer to Figure 3.1.
- B. Pull 1/2 x 5-1/2" screw out of axle sleeve and re-move wheel/tire assembly.
- C. If foam-filled tire, replace with new wheel/tire assembly. If tube-type, replace with new tube and/or 9 x 3.50 - 4 tire.
- D. Reinstall wheel/tire assembly to caster yoke with 1/2 - 13 x 5-1/2" bolt inserted through sleeve axle and secure with the 1/2" nyloc nut.

### 3.3 REPLACING YOKE/CASTER BUSHINGS

- A. Separate wheel from yoke by removing the 1/2 nyloc nut and 1/2 x 5-1/2" screw. Refer to Figure 3.1.
- B. Pull linchpin and remove yoke from caster support.

#### NOTE

On Fixed Decks, three 1/2" and one 1/4" thick spacers are used to raise or lower the mower deck. Make sure these are reinstalled in same position after yoke is serviced.

- C. Replace caster bushings by first driving the old bushings out of the caster support and then installing new bushings with a rawhide mallet.
- D. Install new or serviced yoke, with spacers in position, by inserting yoke shaft through caster support bushings. Install spacer and secure with the linchpin.

#### NOTE

On some Caster Wheel Assemblies, there is a washer located between the top spacer and top bushings. Replace washer as required. Refer to Figure 3.1.

## Section III - CASTER, WHEEL & TIRE ASSEMBLIES

### 3.4 REPLACING CASTER SUPPORTS (FIXED DECKS)

- A. On a Fixed Deck, if a caster support becomes damaged or bent, pull linchpin from caster shaft and remove yoke/wheel assembly from support. See Figure 3.3.

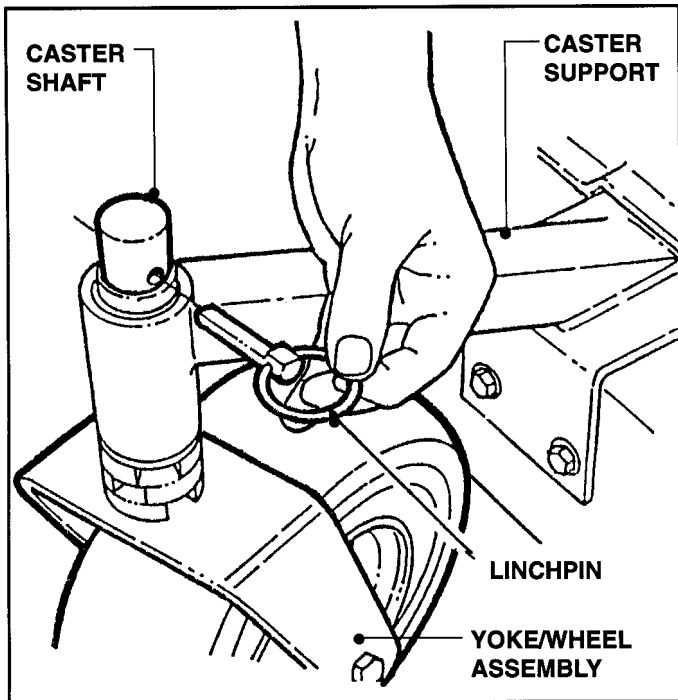


FIGURE 3.3

- B. Remove the four 3/8 x 1" screws, 3/8 lockwashers, 3/8 flat washers and 3/8 nyloc nuts which secure the caster support to mower deck and install new support, using the same 3/8 x 1" screws, lockwashers, flat washers and nyloc nuts. See Figure 3.4.

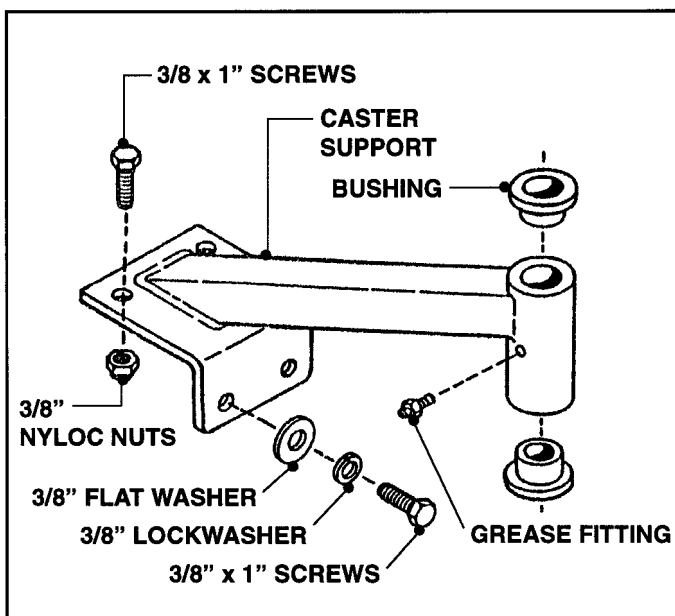


FIGURE 3.4

- C. Install new bushings and grease fitting in caster support.
- D. Reinstall caster yoke/wheel assembly in new caster support with spacers in position and secure with linchpin. Grease yoke shaft with bearing grease through fitting in support.

### 3.5 REPLACING CASTER SUPPORTS (ADJUSTABLE HEIGHT DECKS)

The Caster Supports on the Adjustable Height Decks are integral parts of the deck frame weldment. Should the Support(s) become damaged or bent beyond repair, replace deck frame weldment as follows:

- A. Remove belt cover(s).
- B. Remove the blade belt and blade drive belt.
- C. Separate the deck from the Power Unit by removing the six (6) nuts, washers and bolts. See Figure 3.5.

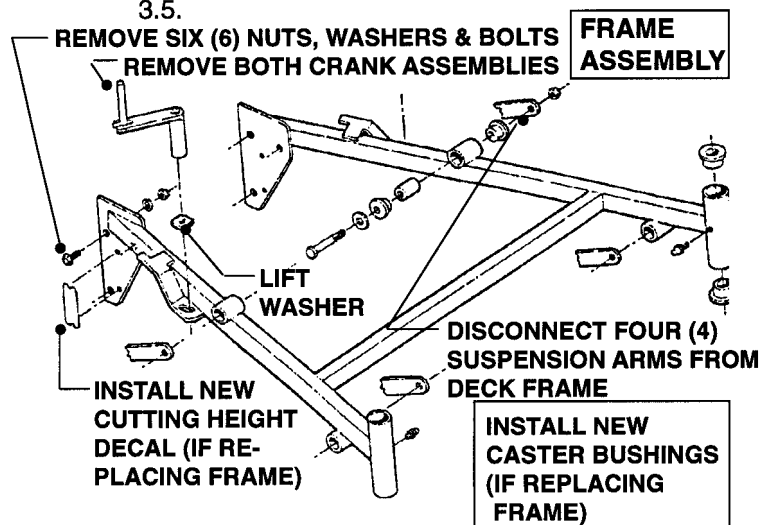


FIGURE 3.5

- D. Remove both Crank Assemblies.
- E. Disconnect the four (4) suspension arms from the deck frame. Remove both bushings and sleeve from each connection to the frame. Refer to Figure 3.5.
- F. Remove both Caster Wheel Assemblies. See Figure 3.6. Deck frame weldment can now be repaired (see 3.6, Caster Support Repair) or replaced with a new part.

# Section III - CASTER WHEEL & TIRE ASSEMBLIES

...Cont'd from Page 3.3

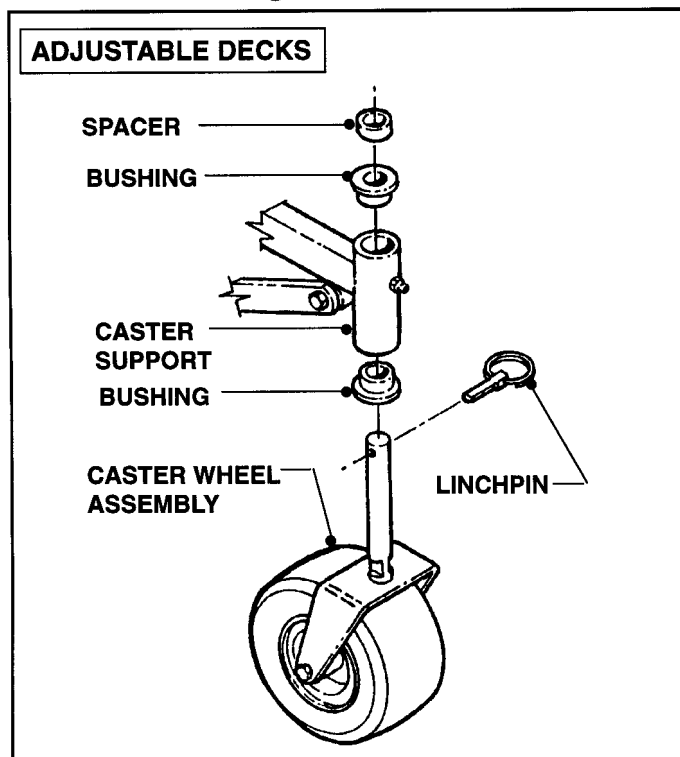


FIGURE 3.6

## 3.6 CASTER SUPPORT REPAIR

The following information covers the repair of misalignment or bent caster supports on fixed and adjustable height decks. The repair procedures, as given, apply to all decks in general and, therefore, need to be reviewed on each deck on an individual basis.

- If a caster support has been bent out of alignment, remove yoke/wheel assembly as shown in Figures 3.3 or 3.6.
- Leave upper and lower caster bushings in place and insert a 1" diameter x 12" long solid steel rod thru the end of the support. See Figure 3.7.

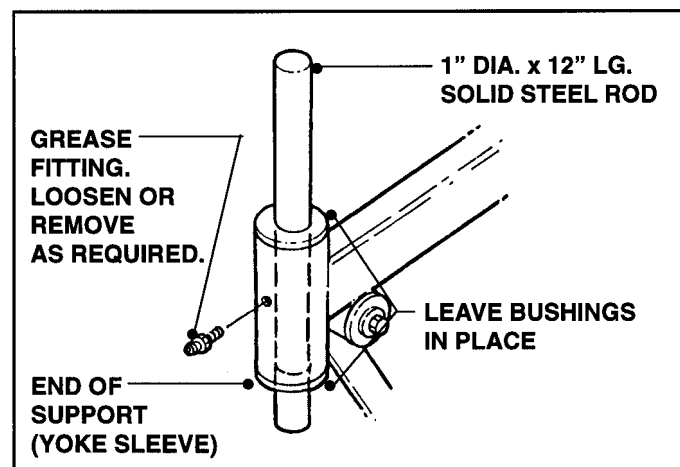


FIGURE 3.7

## NOTE

Before inserting the steel rod through the end of the support, check inside to make sure that the grease fitting is not in the way. If it is, loosen or remove the fitting. Refer to Figure 3.7.

- Place a tight-fitting pipe (5' or 6' long) over the end of the steel rod.
- With two men maneuvering the pipe, bend the caster support into proper alignment.
- Remove steel rod and inspect caster bushings for damage. If no damage is present, reinstall caster wheel assembly.

## 3.7 DECK FRAME WELDMENT INSTALLATION (ADJUSTABLE HEIGHT DECKS)

- Install new bushings (Part No. 2-3556) in each caster support. Seat each bushing using a rawhide mallet. Refer to Figure 3.6.
- Install new grease fittings (Part No. 7-6998) in each caster support.
- Install caster wheel assemblies and lubricate grease fittings with bearing grease.
- Move Deck Frame into place over cutter deck.
- Loosely attach the four (4) deck suspension arms to the deck frame using the sleeves, bushings and mounting hardware previously removed. Refer to Figure 3.5.
- Apply a new "Height-of-Cut" Decal (Part No. 2-9295). See Figure 3.8.

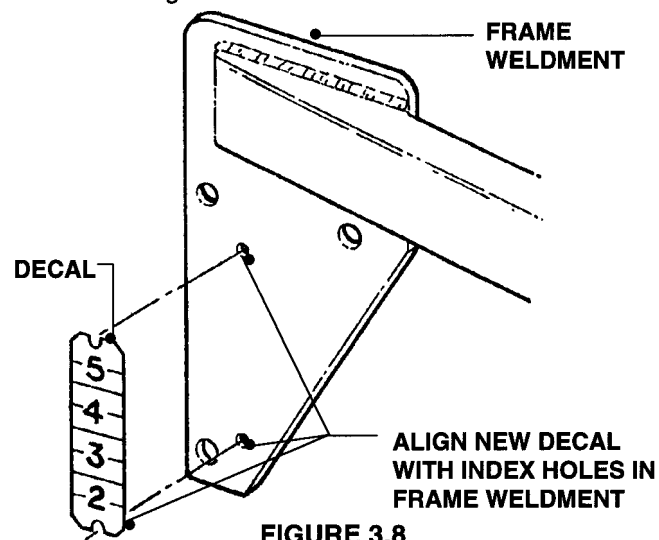


FIGURE 3.8

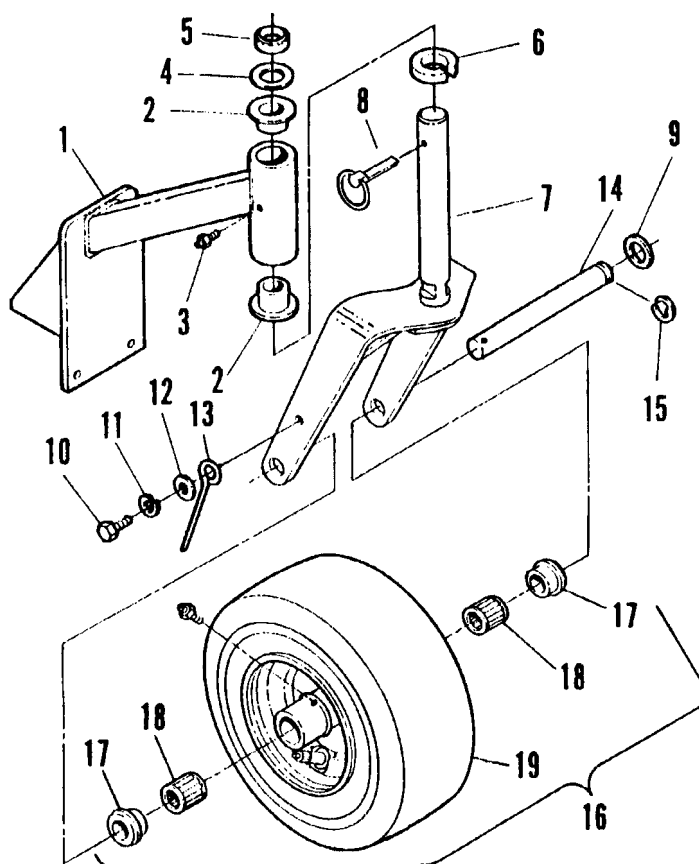
- Attach both crank assemblies to the lift studs. Make sure to install the lift washers.
- Secure the deck frame to the power unit with six (6) bolts, washers and nuts. Tighten bolts to 70/80 Ft. Lbs. torque.
- Install deck belt and blade drive belt.
- Attach belt covers.
- Level deck. (See Section V, Page 5.12).



# Section III - CASTER, WHEEL & TIRE ASSEMBLIES

## 3.7 PARTS SHEET (CASTER WHEEL ASSEMBLY - EARLY 1991)

**FIGURE 3.9**

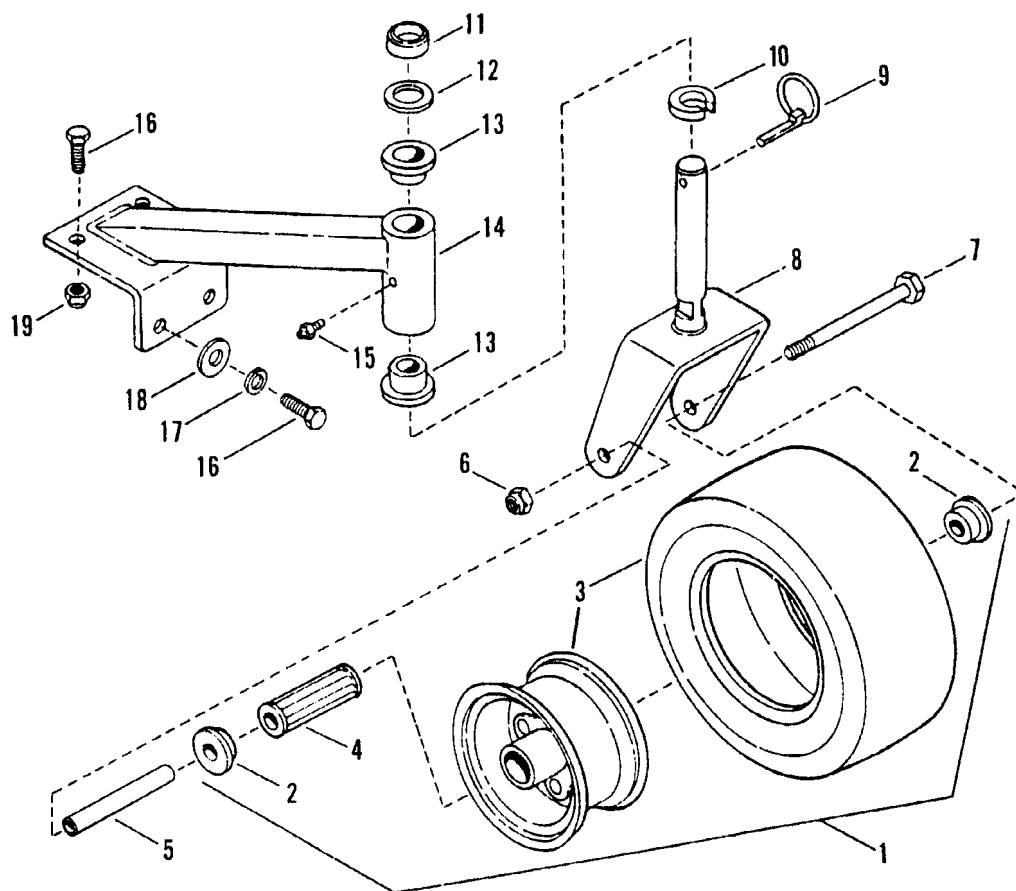


ITEM	PART NO.	DESCRIPTION
1	4-0678	SUPPORT, Caster (36" Deck Only) (Includes Items 2 & 3)
1	4-9798	SUPPORT, Caster (48", 52" & 61" Decks) (Includes Items 2 & 3)
2	2-3556	BUSHINGS, Flange (2)
3	7-6998	ZERK, 1/8" NPT Straight
4	2-3747	BUSHING, Machinery, 1"
5	2-1960	BUSHING
6	1-9152	SPACER, Caster
7	4-9805	YOKE, Caster
8	1-7711	PIN, Linch 7/16
9	9-1050	BUSHING, Machinery, 3/4"
10	9-0603	SCREW, Hex Cap
11	9-0118	LOCKWASHER, 3/8"
12	9-0517	FLATWASHER, 3/8"
13	1-9289	MOUNT, Caster Axle
14	1-6460	AXLE, Caster
15	1-2705	E-RING
16	5-2085	WHEEL & TIRE ASSEMBLY (Includes Items 17, 18 & 19)
17	1-7786	BEARING, Flange, 3/4" (2)
18	1-7785	ROLLER BEARING, 3/4" x 1" (2)
19	1-7784	TIRE, 4-Ply Smooth Tread

# Section III - CASTER, WHEEL & TIRE ASSEMBLIES

## 3.7 PARTS SHEET (CASTER WHEEL ASSEMBLY - 1992 THRU 1999)

FIGURE 3.10



ITEM	PART NO.	DESCRIPTION
1	2-2258	ASSEMBLY, Wheel and Tire
2	2-2394	RETAINER, Flanged (2)
3	2-9869	ASSEMBLY, Tire & Rim, 9 x 3.5 Foam-Filled (7/93 PRO GEAR & PRO HYDRO MID-SIZE Series 1)
	2-2258	ASSEMBLY, Tire & Wheel, 9 x 3.50 - 4 (Includes Tube) PMA7360/7480 (1/92 Series 0)
	2-2392	TIRE, 9 x 3.50 - 4 (Includes Tube) PMA7361/7481 (6/92 Series 1)
	"	TIRE, 9 x 3.50 - 4 (Includes Tube) PMA7361/7481 & PMA7362/7482 (7/93 Series 1 & 2)
	2-9870	TIRE, 9 x 3.50 - 4 - PMA7364/7484/7524 (1/95 Series 4)
	"	TIRE, 9 x 3.50 - 4 - SP320/360/480/520 & SPA360/480/520/610 (12/95 Series 0)
	"	TIRE, 9 x 3.50 - 4 - SPE360 (10/97 Series)
4	2-2395	ROLLER BEARING
5	2-2151	SLEEVE, Axle
6	9-1121	NUT, 1/2 - 13 Nyloc
7	9-1123	BOLT, 1/2 - 13 x 5 1/2" HHC
8	4-0726	YOKE, Caster Weldment
9	1-7711	PIN, Linch
10	1-9152	SPACER (3)
11	2-1960	BUSHING
12	2-3747	SPACER
13	2-3556	BUSHING, Caster (2)
14	2-6943	ASSEMBLY, Caster Support (Includes 14 & 15)
15	7-6998	FITTING, Lube
16	9-0563	SCREW, 3/8 - 16 x 1" HHC (4)
17	9-0118	WASHER, 3/8 Lock (2)
18	9-0517	WASHER, 3/8 Flat (4)
19	7-6979	NUT, 3/8 - 16 Nyloc (2)

# Section IV

## CUTTER HOUSING ASSEMBLIES

### CONTENTS

<u>ITEM</u>	<u>PAGE No.</u>
Introduction . . . . .	4.2
Cutter Housing Assembly Replacement (Early Models - 1992-1996). . . . .	4.2
Cutter Housing Assembly Rebuild/Overhaul (Early Models - 1992-1996). . . . .	4.2 - 4.3
Cutter Housing Assembly Replacement (Later Models - 1997-1998). . . . .	4.3
Cutter Housing Assembly Rebuild/Overhaul (Later Models - 1997-1998). . . . .	4.3
Cutter Housing Assembly Replacement (PRO Hydro Models, Series 4 -1995). . . . .	4.4
Cutter Housing Assembly Rebuild/Overhaul (PRO Hydro Models, Series 4-1995). . . . .	4.4
Cutting Blade Service. . . . .	4.5
Blade Removal & Sharpening . . . . .	4.5
Blade Installation . . . . .	4.5
Special Recycling Blade (NINJA) Wear Limit . . . . .	4.6
Blade Removal & Sharpening (NINJA). . . . .	4.6
Blade Installation (NINJA). . . . .	4.7
Blade Chart . . . . .	4.7
Parts Sheet (Cutter Housing Assembly - 1991 Thru 1995). . . . .	4.8
Parts Sheet (Cutter Housing Assembly - 1991 Thru 1995). . . . .	4.9
Parts Sheet (Cutter Housing Assembly - 1995 Thru 1999). . . . .	4.10

# Section IV - CUTTER HOUSING ASSEMBLIES

## INTRODUCTION

The Cutter Housing Assembly can be replaced as an assembly or rebuilt using individual replacement parts. The following procedures are outlined separately and can be performed with the Mower Unit attached to the Power Unit.

### 4.1 CUTTER HOUSING ASSEMBLY REPLACEMENT (EARLY MODELS - 1992-1996)



#### CAUTION

Wear heavy gloves to avoid cutting yourself when handling blades!



- A. Elevate front of deck.
- B. Remove Deck Belt Cover.
- C. Remove Spindle Pulley Drive Belt.
- D. Remove Spindle Nut and any Blade Spacers from top of Spindle. See Figure 4.1.

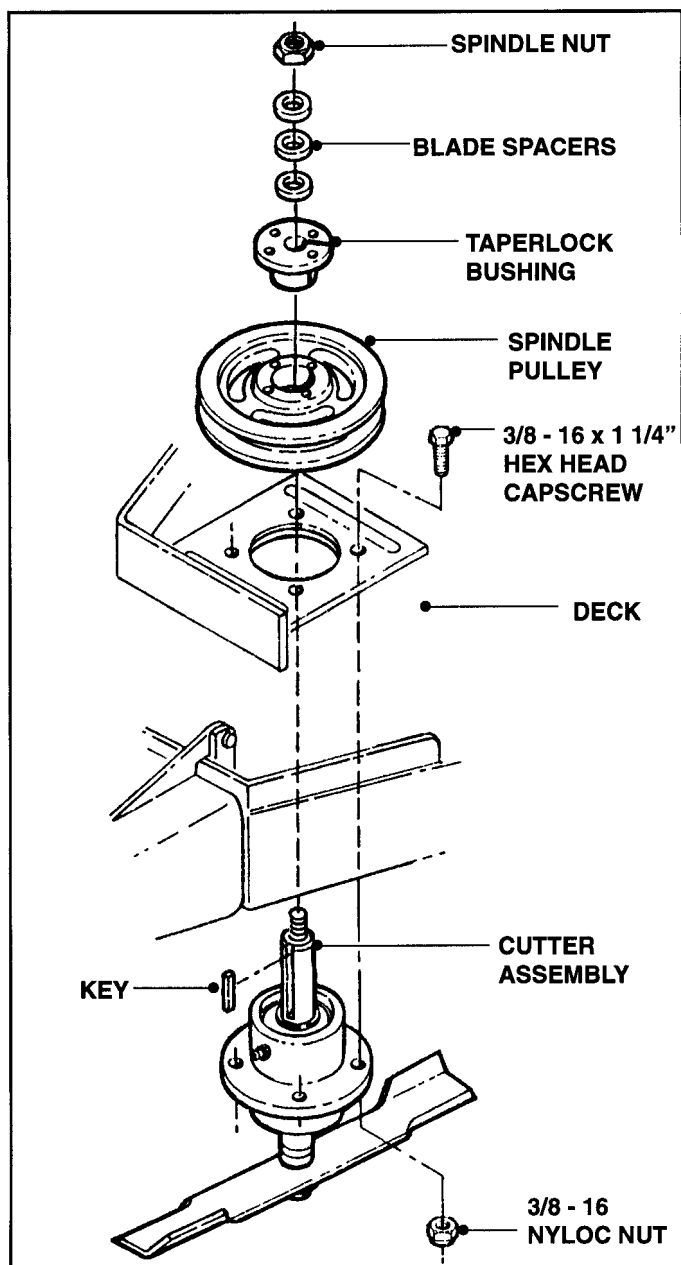


FIGURE 4.1

MANUAL No. 07223 (I.R. 11/98)

- E. Loosen Taperlock Bushing and remove Spindle Pulley and Key.
- F. Remove the four (4) 3/8 " - 16 x 1 1/4" Hex Cap-screws and Nuts securing Spindle Housing to Deck and remove Cutter Assembly.
- G. Reverse above steps to install replacement Spindle Assembly.

### 4.2 CUTTER HOUSING ASSEMBLY REBUILD/OVERHAUL (EARLY MODELS - 1992-1996)

- A. Remove Cutter Housing Assembly as described in "Cutter Housing Assembly Replacement".
- B. Use two (2) 15/16" Box End Wrenches (one on each end of Spindle) to remove Spindle Nut, Blade Bolt, Spacers and Blade. See Figure 4.2.

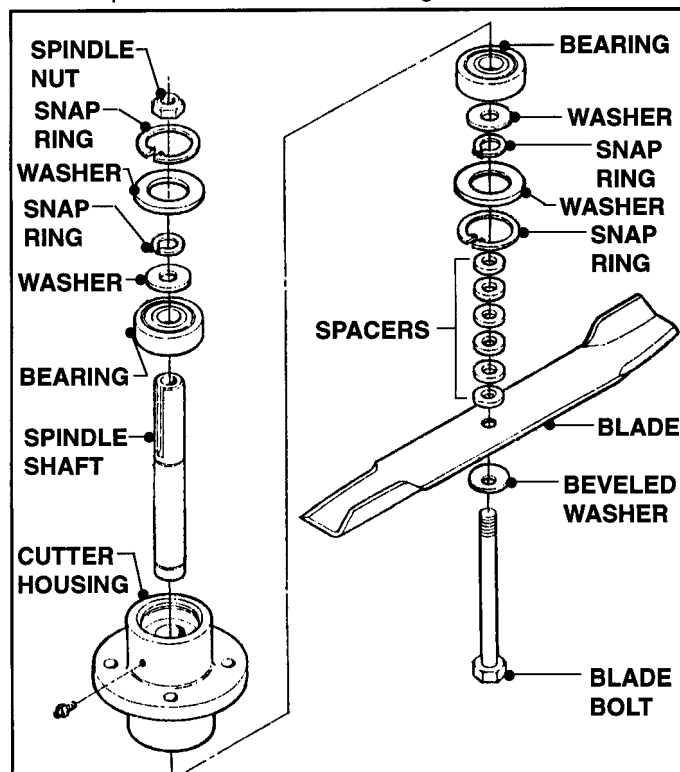


FIGURE 4.2

- C. Remove Snap Ring from top of Cutter Housing.
- D. Remove the large Cutter Housing Washer.
- E. Remove the Snap Ring from the top of the Spindle Shaft.
- F. Remove the small Spindle Washer.
- G. Remove the Snap Ring and large Washer from bottom of Cutter Housing.
- H. Using a soft-faced mallet, tap the top of the Spindle downward until Spindle and lower Bearing are free of the Housing.
- J. Remove lower Snap Ring, small Spindle Washer and Bearing from Spindle Shaft.
- K. Clean and inspect all components for damage or wear. Replace components as required.
- L. Install components in reverse order.

## Section IV - CUTTER HOUSING ASSEMBLIES

### NOTE

When installing blade, torque Blade Bolt and Spindle Nut to 50 ft. lbs. (68 N•m).  
Lube rebuilt/overhauled Cutter Assembly with two (2) shots of bearing grease.

### 4.3 CUTTER ASSEMBLY REPLACEMENT (LATER MODELS - 1997-1998)



### CAUTION

Wear heavy gloves to avoid cutting yourself when handling blades.



- A. Elevate front of deck.
- B. Remove Deck Belt Cover.
- C. Remove Spindle Pulley Drive Belt.
- D. Remove Spindle Nut, any Spacers and Spindle Washer from top of Spindle. See Figure 4.3.

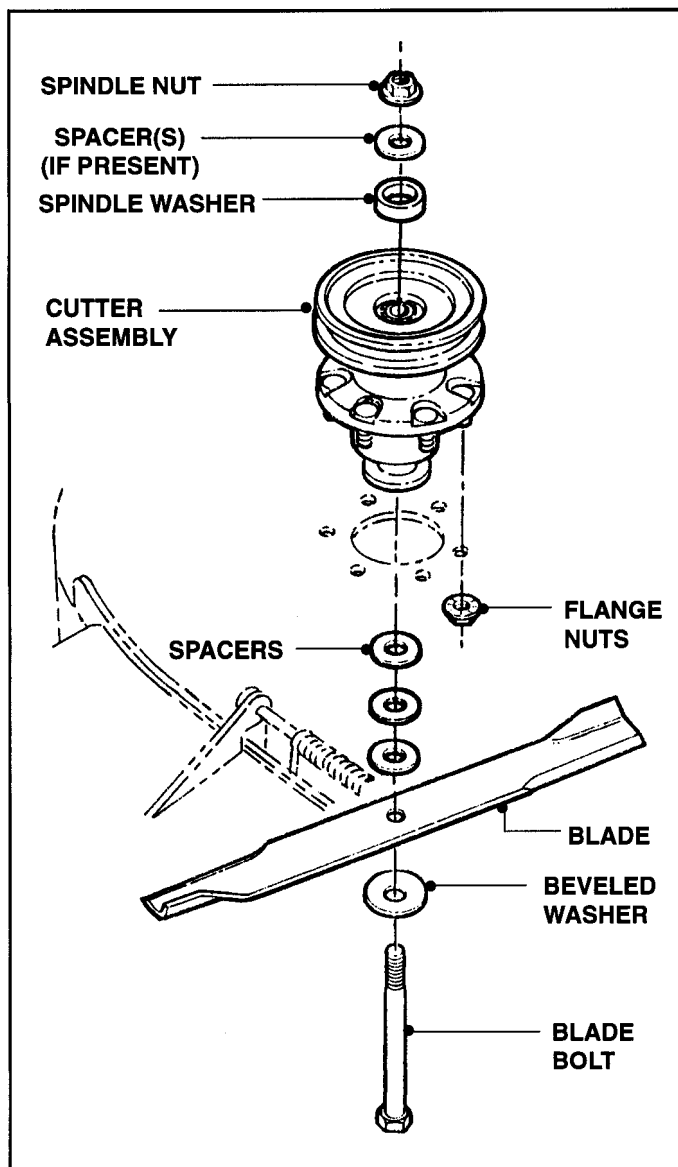


FIGURE 4.3

- E. Remove Blade Bolt, Beveled Washer, Blade and any Blade Spacers. Refer to Figure 4.3.
- F. Remove the six (6) 3/8 - 16 Hex Flange Lock Nuts securing the Cutter Housing to the Deck and remove Cutter Assembly.
- G. Reverse above steps to install replacement Cutter Assembly.

### 4.4 CUTTER ASSEMBLY REBUILD/OVERHAUL (LATER MODELS - 1997-1998)

- A. Remove Cutter Assembly as described in "Cutter Assembly Replacement".
- B. Remove Spindle Washer. See Figure 4.4.

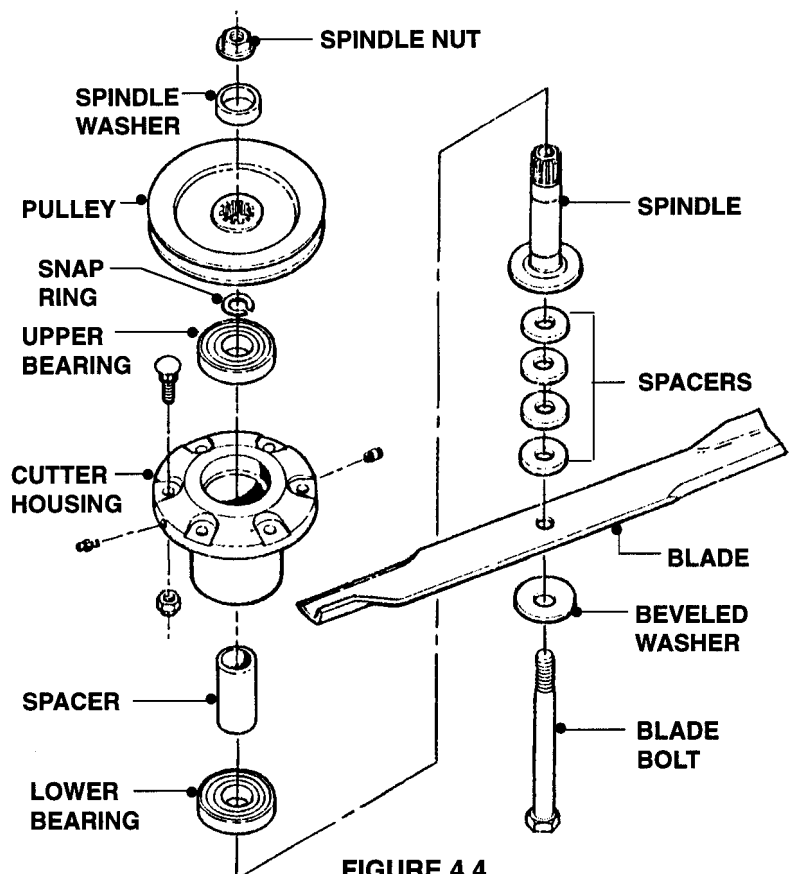


FIGURE 4.4

- C. Remove Pulley and Snap Ring.
- D. Using a soft-faced mallet, tap the top of the Spindle downward until the Spindle, Lower Bearing and Spacer are free of the Cutter Housing.
- E. Remove Upper Bearing.
- F. Clean and inspect all components for damage or wear. Replace components as required.
- G. Install components in reverse order.
- H. Torque blade bolt and spindle nut to 60 to 75 ft. lbs. of torque (81 to 102 N•m).
- I. Fill Cutter Housing with grease.

### NOTE

Inspect Cutting Blades before installation. Sharpen or replace Blades as required. See 4.7, CUTTING BLADE SERVICE, for information.

# Section IV - CUTTER HOUSING ASSEMBLIES

## 4.5 CUTTER ASSEMBLY REPLACEMENT (PRO HYDRO MODELS, Series 4 - 1995)



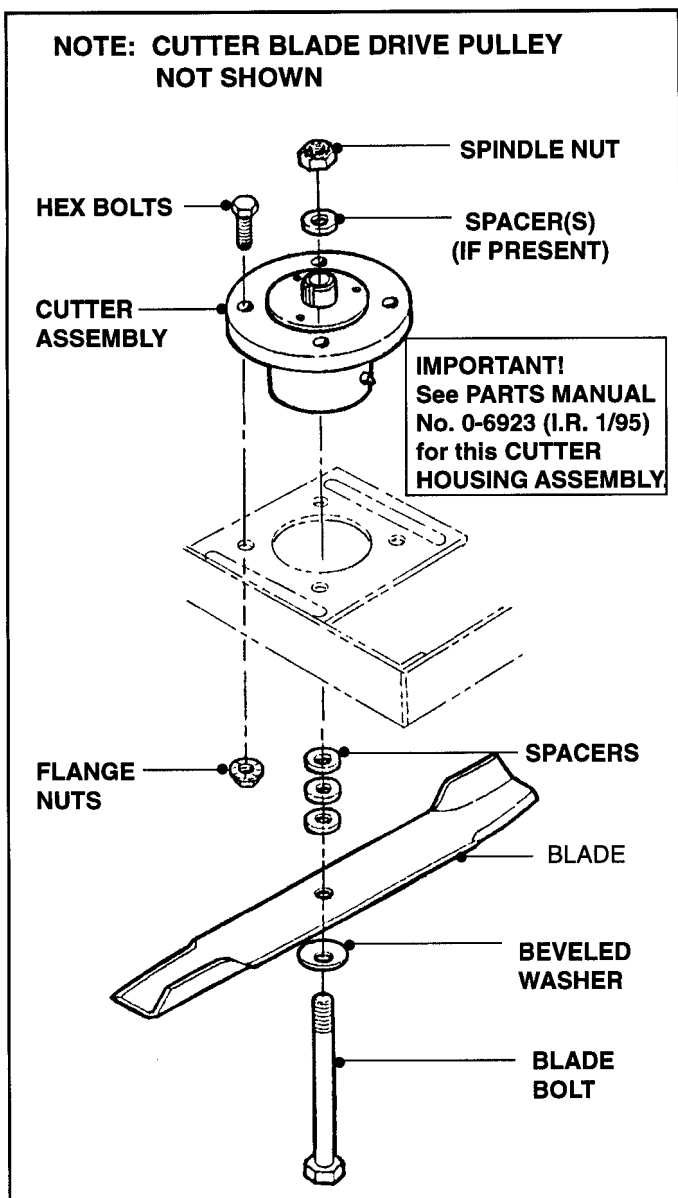
### CAUTION



Wear heavy gloves to avoid cutting yourself when handling.

- A. Elevate front of Deck.
- B. Remove Deck Belt Cover.
- C. Remove Spindle Pulley Drive Belt.
- D. Remove Spindle Nut and any Spacers from top of Spindle. See Figure 4.5.

**NOTE: CUTTER BLADE DRIVE PULLEY NOT SHOWN**

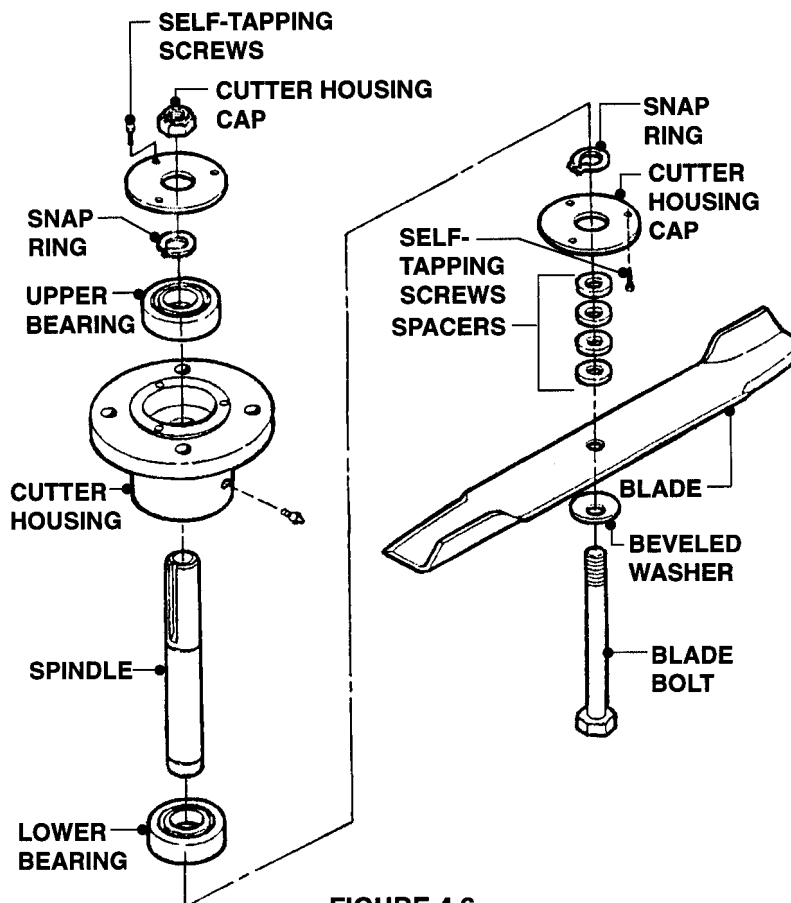


**FIGURE 4.5**

- E. Remove Blade Bolt, Beveled Washer, Blade and any Blade Spacers. Refer to Figure 4.5.
- F. Remove the four (4) 3/8 - 16 Hex Flange Lock Nuts securing the Cutter Housing to the Deck and remove Cutter Assembly.
- G. Reverse above steps to install replacement Cutter Assembly.

## 4.6 CUTTER ASSEMBLY REBUILD/OVERHAUL (PRO7 HYDRO MODELS, Series 4 - 1995)

- A. Remove Cutter Assembly as described in "Cutter Assembly Replacement".
- B. Remove the six (6) #10 - 24 x 1/2" Self-Tapping screws from the upper and lower Cutter Housing Caps. See Figure 4.6.



**FIGURE 4.6**

- C. Remove Upper and Lower Snap Rings.
- D. Using a soft-faced mallet, tap the top of the Spindle downward until the Spindle and Lower Bearing are free of the Cutter Housing.
- E. Remove Upper Bearing.
- F. Clean and inspect all components for damage or wear. Replace components as required.
- G. Install components in reverse order.
- H. Torque Blade Bolt and Spindle Nut to 60 to 75 ft. lbs. of torque (81 to 102 N•m).

### NOTE

Inspect Cutting Blades before installation. Sharpen or replace Blades as required. See 4.7, CUTTING BLADE SERVICE, for information.

# Section IV - CUTTER HOUSING ASSEMBLIES

## 4.7 CUTTING BLADE SERVICE

- A. When performing service on a mower unit, be sure to check the Cutting Blades for damage or signs of excessive wear. See Figure 4.7 for blade wear limits.

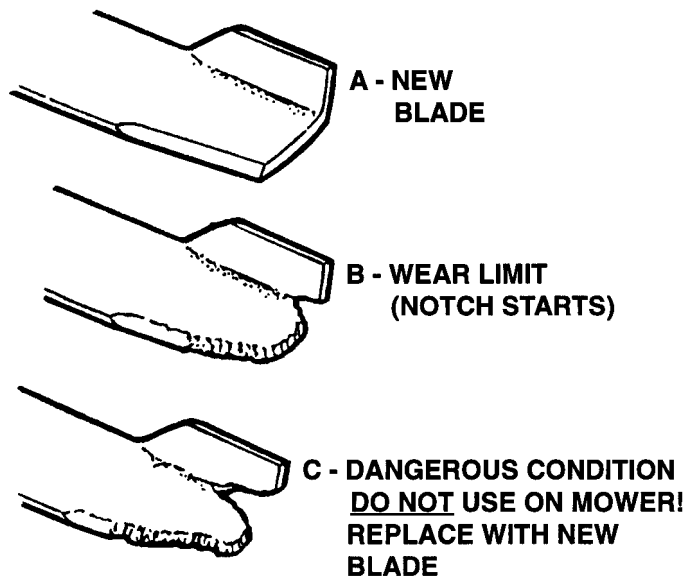


FIGURE 4.7

- B. Consult the appropriate Parts Manual or Snapper Dealer when ordering replacement blades for a specific mower.

### NOTE

See Page 4.6 for information pertaining to the SNAPPER NINJA Recycling Blade.

## 4.8 BLADE REMOVAL AND SHARPENING

- A. Place the mower on a smooth level surface, turn engine OFF, remove key, disconnect Spark Plug Wire from Spark Plug and secure wire away from plug.  
B. Remove blades.



### WARNING

Take NOTE of the number of Blade Spacers that are under the Blade Mounting Nuts and on the Spindle side of the Blade.



- C. Clean and inspect each Blade for excessive wear and damage. Refer to Figure 4.7.  
D. Should Blades be in acceptable condition, sharpen at 25 degrees. See Figure 4.8.  
E. Balance each Blade after sharpening by grinding metal from the heavy end of the Blade.



### WARNING

The use of aftermarket or "Universal" Blades may adversely affect mower performance and/or safety.

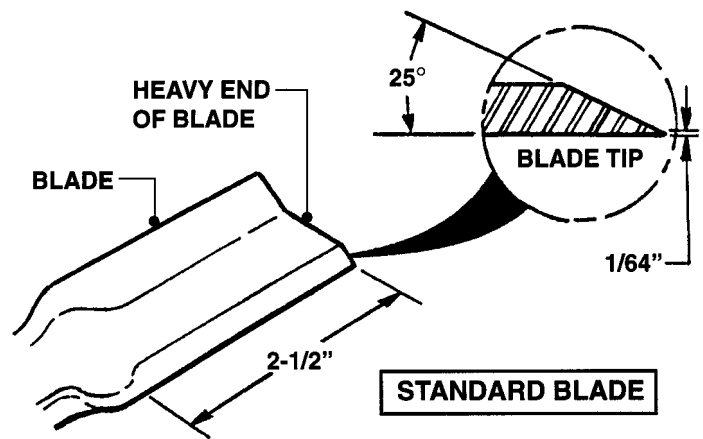


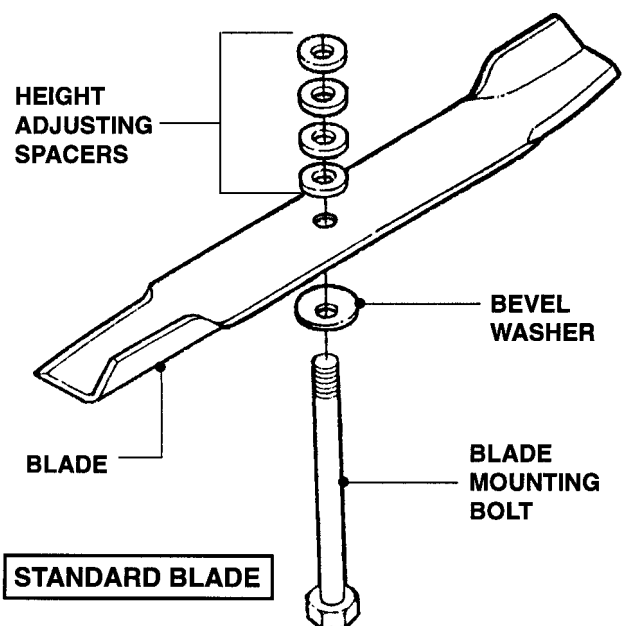
FIGURE 4.8

### NOTE

When sharpening Blades, leave 1/64" untouched. Razor sharp Blades dull quicker and damage easier. Commercial balancers are available and should be used in accordance with the manufacturer's instructions.

## 4.9 BLADE INSTALLATION

- A. Place the Blade Mounting Bolt through Bevel Washer and into Blade and place Blade Spacers over Bolt. Make certain each Blade is installed with the same amount of Spacers removed. See Figure 4.9.  
B. Install Blade Mounting Bolt with Spacers and Blade into Spindle.  
C. Install an equal amount of Blade Spacers on top of each Blade Mounting Bolt.  
D. Install the Blade Mounting Nut on each Blade Mounting Bolt.  
E. Torque each Blade Mounting Bolt and Nut to 60 to 75 ft. lbs. of torque (81 to 102 N•m).



TORQUE TO 60-75 FOOT POUNDS (81 to 102 N•m)

FIGURE 4.9

## Section IV - CUTTER HOUSING ASSEMBLIES

### 4.10 SPECIAL RECYCLING BLADE (NINJA) WEAR LIMIT

- The special recycling blade (NINJA) is used on those Mowers set up for mulching. This blade **MUST** be inspected for wear and damage each time one of these mowers is brought in for repair.
- Consult the blade drawings shown in Figure 4.10 to determine if a blade can be sharpened and safely reused, or if it must be replaced with a new part. Consult the SNAPPER "ACCESSORIES" Manual for Part No.
- If the blade is badly chipped, bent, out of balance, or as soon as a notch begins to wear in the tip between the flat blade and upturned blade, as depicted in Illustration "B" of Figure 4.10, then the blade **MUST** be replaced.
- Refer to 4.11, BLADE REMOVAL AND SHARPENING (NINJA).

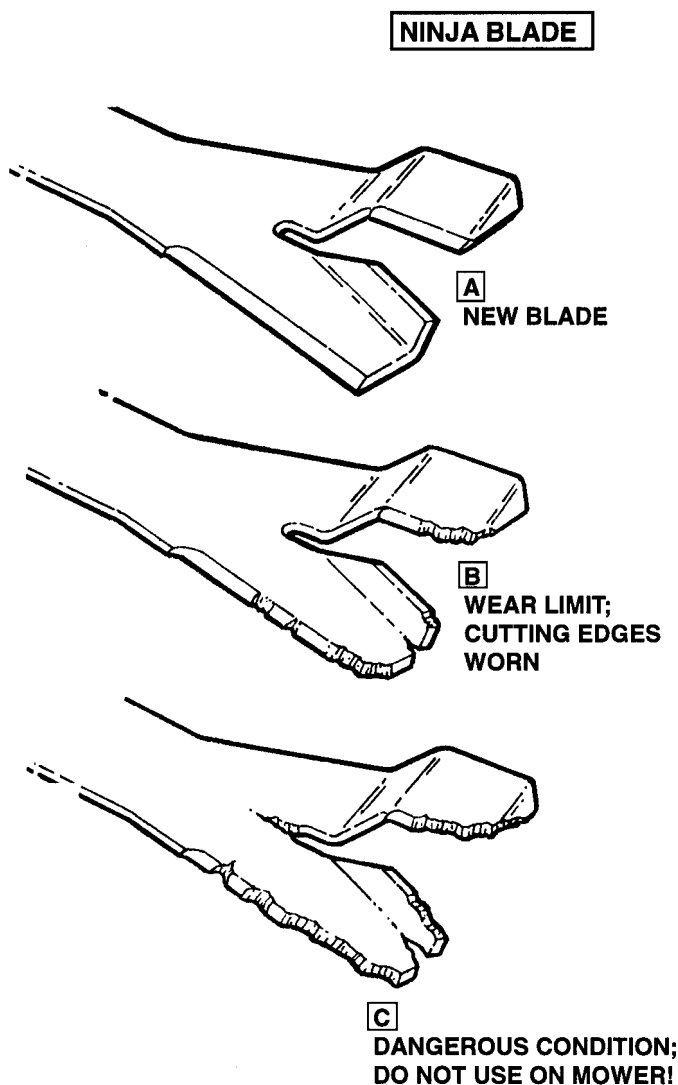


FIGURE 4.10

⚠
**WARNING**
⚠

Never allow a customer to take a mower out of your repair shop with a NINJA blade worn to the extent shown in illustration "C" of Figure 4.10, without warning that customer of the danger that a tip could fly off and cause either personal injury or property damage.

⚠
**CAUTION**
⚠

Avoid cutting yourself on a sharp blade! Wear gloves to protect your hands while handling the blade.

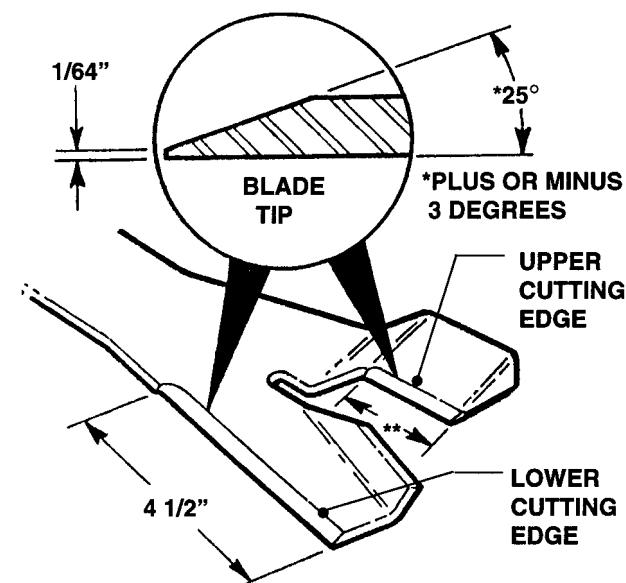
### 4.11 BLADE REMOVAL AND SHARPENING (NINJA)

- Remove blade(s).

**NOTE**

Regardless of the location of the Blade Spacers **when the blade is removed, all** spacers should be placed at the bottom of the spindle when replacing the blade. This arrangement will provide an "low-as-possible" cut. See Figure 4.12, Page 4.7.

- Clean and inspect blades for excessive wear or damage. Refer to Figure 4.10.
- Sharpen both cutting edges on each end of the blade at an angle of 22 to 28 degrees. The cutting surface should extend inward about 4 1/2" from the tip of the lower cutting edge and as far as practical from the tip of the upper cutting edge. See Figure 4.11.



**NINJA  
BLADE**

\*\* SHARPEN AS FAR AS PRACTICAL

FIGURE 4.11



# Section IV - CUTTER HOUSING ASSEMBLIES

## 4.12 BLADE INSTALLATION (NINJA)

- A. Place the Blade Mounting Bolt through Bevel Washer and Blade.
- B. Install all Spacers on top of Blade. See Figure 4.12.
- C. Install Blade Mounting Bolt with Blade and Spacers into Spindle.
- D. Install the Blade Mounting Nut on each Blade Mounting Bolt.
- E. Torque each Blade Mounting Bolt and Nut to 60 to 75 ft. lbs. of torque (81 to 102 N•m).

### NOTE

Make certain that all spacers are installed on top of Blade and under the Spindle.

## 4.13 BLADE CHART

The Blade Chart shown below identifies the correct SNAPPER Cutter Blade to be used with the different mower units. "Aftermarket" blades are not to be used with these mower units!

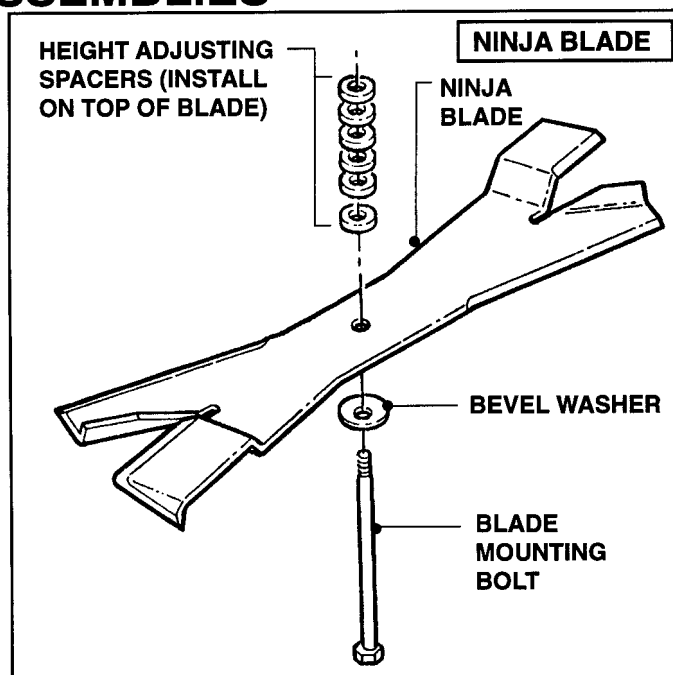


FIGURE 4.12

## BLADE CHART

MOWER UNIT	PART No.	DESCRIPTION	QTY.	PARTS MANUAL (REF.)
SPE360	2-9246	Blade, 18" (36")	2	#06927 (I.R. 10/97)
SP320	2-9247	Blade, 16 1/2" (32")	2	#06925 (I.R. 12/95) See Pgs. 22, 24, 25 26, 27, 28 & 29, 30, 31
SP360	2-9246	Blade, 18" (36")	2	
SP480	2-9247	Blade, 16 1/2" (48")	3	
SP520	2-9246	Blade, 18" (52")	3	
SPA360	2-9246	Blade, 18" (36")	2	#06924 (I.R. 1/95) #06923 (I.R. 1/95) #06922 (I.R. 7/93) #06921 (REV.2, 7/93) #06921 (I.R. 6/92) #06920 (I.R. 1/92)
SPA480	2-9247	Blade, 16 1/2" (48")	3	
SPA520	2-9246	Blade, 18" (52")	3	
SPA610	2-9251	Blade, 21: (61")	3	
PMA7364	1-7037	Blade, 18" High-Lift (PRO736)	2	#06924 (I.R. 1/95) #06923 (I.R. 1/95) #06922 (I.R. 7/93) #06921 (REV.2, 7/93) #06921 (I.R. 6/92) #06920 (I.R. 1/92)
PMA7484	1-7043	Blade, 16 1/2" High-Lift (PRO748)	3	
PMA7524	1-7043	Blade, 16 1/2" High-Lift (PRO752)	3	
PMA7614	1-7081	Blade, 21" High-Lift (PRO761)	3	#17525 (I.R. 1/91)

# Section IV - CUTTER HOUSING ASSEMBLIES

## 4.14 PARTS SHEET (CUTTER HOUSING ASSEMBLY - 1991 THRU 1995)

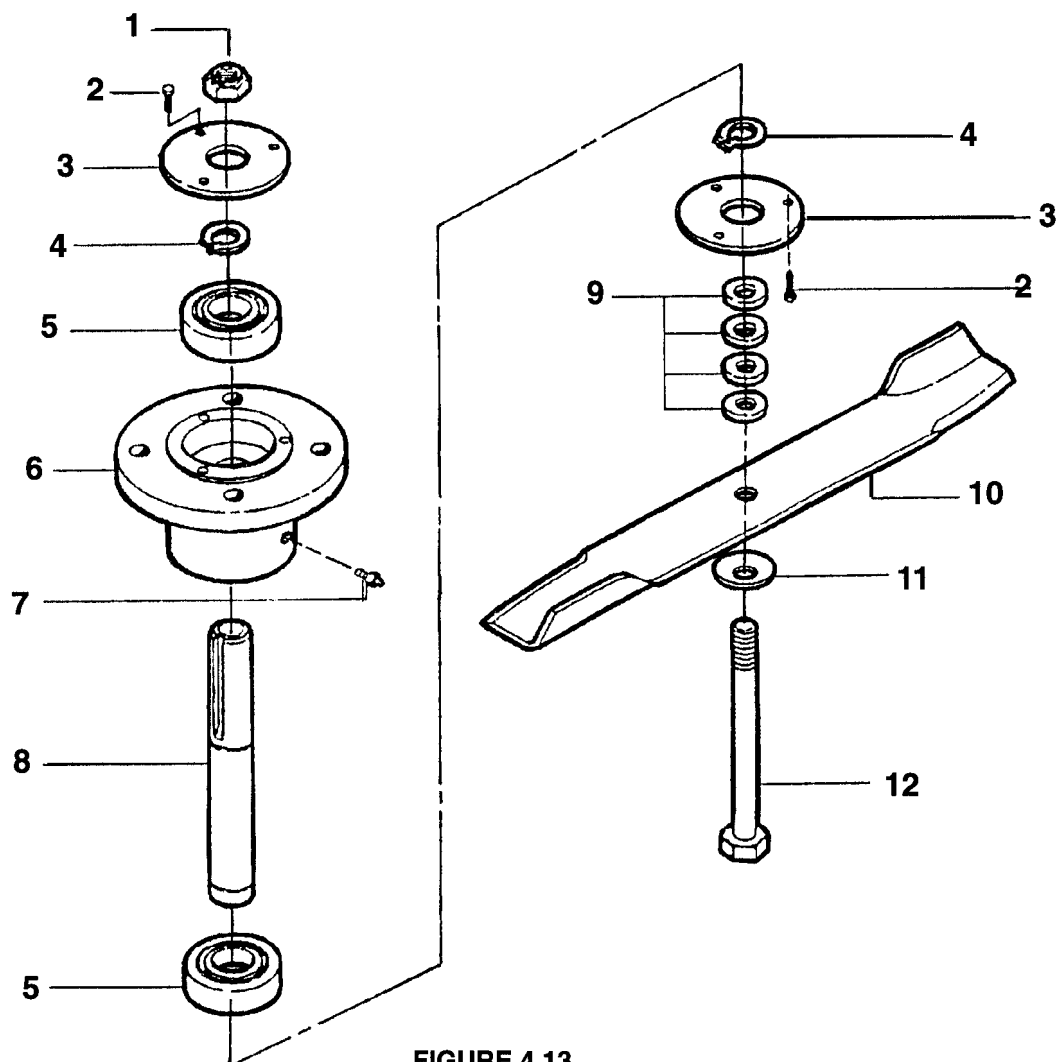


FIGURE 4.13

ITEM	PART No.	DESCRIPTION
1	7-6980	NUT, 5/8 - 18 Hex
2	9-0913	SCREW, #10 - 24 x 1 1/2" Self-Tapping (6)
3	1-9096	CAP, Cutter Housing (2)
4	2-3548	RING, Retaining (2)
5	1-9125	BEARING, Single sealed
6	2-2158	HOUSING, Cutter
7	7-6997	ZERK, 1/8 NPT
8	1-9189	SPINDLE, Cutter
9	7-6436	SPACER, Blade
10	1-7037	BLADE, 18" (36" Cutting Deck)
-	1-7043	BLADE, 16 1/2" (48" & 52" Cutting Decks)
-	1-7081	BLADE, 21" High-Lift (61" Cutting Deck)
11	1-6440	WASHER, Beveled
12	1-6447	BOLT, 5/8 - 18 x 8 1/2" Hex Head Cap

# Section IV - CUTTER HOUSING ASSEMBLIES

## 4.15 PARTS SHEET (CUTTER HOUSING ASSEMBLY - 1991 THRU 1995)

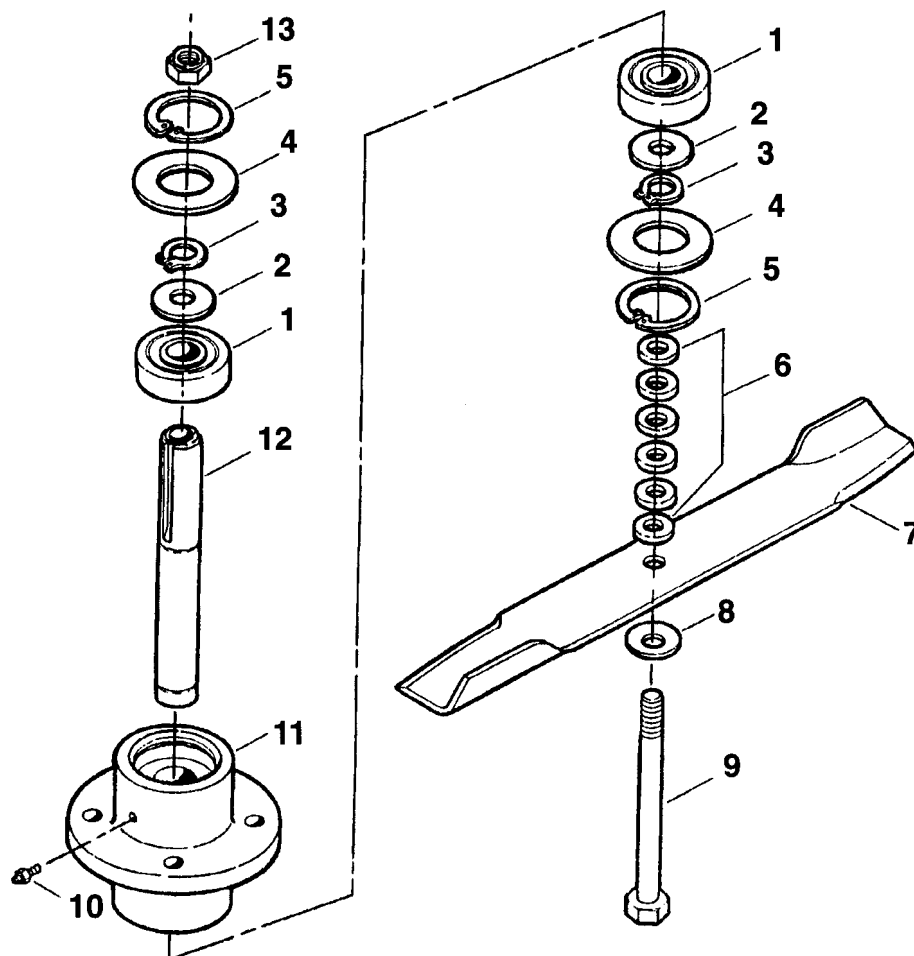


FIGURE 4.14

ITEM	PART No.	DESCRIPTION
1	1-9125	BEARING, Sealed (2)
2	2-4348	WASHER, Spindle (2)
3	2-2453	SNAP-RING, Spindle Shaft (2)
4	2-2456	WASHER, Spindle Housing (2)
5	2-2454	SNAP-RING, Spindle Housing (2)
6	7-6436	SPACER, Blade (6)
7	1-7037	BLADE, 18", High-Lift (PRO736)
-	1-7043	BLADE, 16 1/2", High-Lift (PRO748)
8	1-6440	WASHER, Beveled
9	9-1136	BOLT, 5/8 - 18 x 9 3/4" Hex Head Cap, Grade 5
10	7-6997	FITTING, Lube
11	2-2187	HOUSING, Cutter
12	2-2186	SHAFT, Spindle
13	7-6980	NUT, 5/8 - 18 Hex

# Section IV - CUTTER HOUSING ASSEMBLIES

## 4.16 PARTS SHEET (CUTTER HOUSING ASSEMBLY - 1995 THRU 1999)

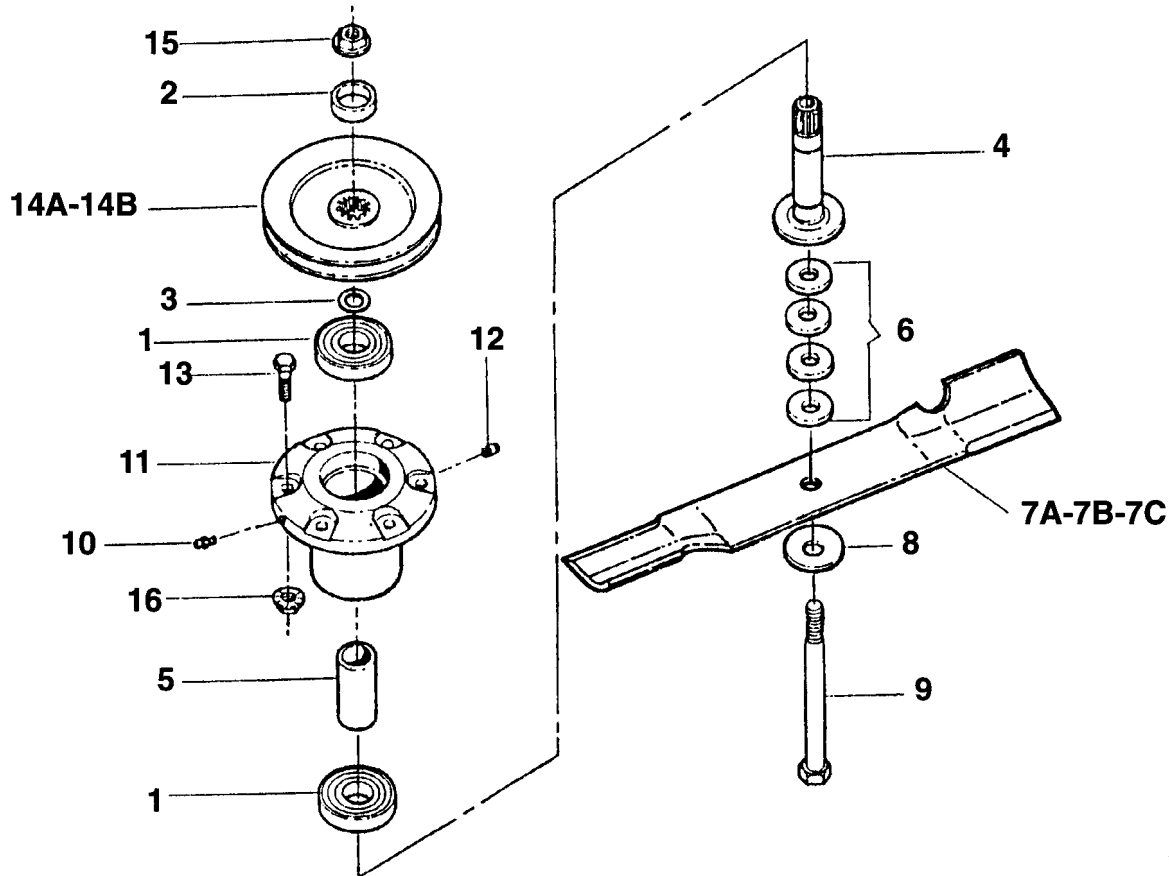


FIGURE 4.15

ITEM	PART No.	DESCRIPTION
1	2-9422	BEARING, Sealed (2)
2	2-9270	WASHER, Spindle
3	2-9274	SNAP-RING, Spindle Shaft
4	2-9253	SHAFT, Spindle
5	2-9254	SPACER, Bearing
6	2-9271	SPACER, Blade (4)
7A	2-9246	BLADE, 18" (36" & 52" Decks)
7B	2-9247	BLADE, 16 1/2" (32" & 48" Decks)
7C	2-9251	BLADE, 21" (61" Decks)
8	1-6440	WASHER, Beveled
9	2-9256	BOLT, 5/8 - 18 x 7 1/2" Hex Head Cap Grade 5
10	2-9275	FITTING, Lube
11	5-8237	HOUSING, Cutter
12	2-9384	VENT, Spindle
13	2-9302	BOLT, 3/8 - 16 x 1 1/4" Rib Necked (6)
14A	2-9245	PULLEY, 5 3/4" O.D. (32", 48", 52", 61" Decks)
14B	2-9249	PULLEY, 5 3/4" O.D. (36" Deck)
15	9-1736	NUT, 5/8 - 18 Hex Flange Lock, Grade 5
16	9-0613	NUT, 3/8 - 16 Hex Flange Lock (6)

NOTE: Part Number 5-8237 (Spindle Housing Sub-Assembly) is comprised of Items 11 and 12 one (1) each as well as Item 13 six (6) each.

# Section V

# MOWER UNIT &

# COMPONENTS

---

## CONTENTS

<u>ITEM</u>	<u>PAGE No.</u>
Introduction . . . . .	5.2
Adjusting Height of Cut (Early Models - 1991/1995) . . . . .	5.2-5.7
Adjusting Height of Cut (Later Models - 1996/1999) . . . . .	5.8-5.10
• FIXED DECKS (SP320, SP360, SP480, SP520 & SP360) . . . . .	5.8-5.9
• ADJUSTABLE DECKS (SPA360, SPA480, SPA520 & SPA610) . . . . .	5.10
Repairing Damaged Decks . . . . .	5.11
• WELDING DECKS . . . . .	5.11
• STRAIGHTENING BENT DECKS . . . . .	5.11
• INSTALLATION OF No. 4-6214 LIFT WASHER WELDMENT FOR ADJUSTABLE (SPA) DECKS . . . . .	5.11-5.12
Leveling Adjustable Height Decks . . . . .	5.12
Belt Tension Adjustment . . . . .	5.13
• CUTTER BELT TENSION (36" DECK - 1991/1993) . . . . .	5.13
• CUTTER BELT TENSION (36" DECK - 1994/1995) . . . . .	5.13
• CUTTER BELT TENSION (36" DECK - 1996/1999) . . . . .	5.13
Belt Tension Adjustment (48", 52" & 61" Decks) . . . . .	5.14-5.15
• CUTTER BELT TENSION (48" DECK - 1991/1993) . . . . .	5.14
• R.H. CUTTER BELT TENSION (48" DECK - 1991/1993) . . . . .	5.14-5.15
• CUTTER BELT TENSION (48" DECK - 1994/1995) . . . . .	5.15
• CUTTER BELT & BLADE/BLADE BELT TENSION (48", 52" & 61" DECKS - 1996/1999) . . . . .	5.15

---

## REFERENCE LITERATURE

<u>OPERATOR'S MANUAL No.</u>	<u>PAGE No.</u>
#2-2762 (12/91) . . . . .	14-15/20-25
#2-7210 (I.R. 6/93) . . . . .	12-13/21-26
#2-4680 (REV. 1, 7/93) . . . . .	14-15/21-30
#2-7210 (I.R. 12/93) . . . . .	12-13/21-26
#2-7210 (REV. 2, 11/94) . . . . .	13/21-23
#2-7210 (REV. 2, 1/95) . . . . .	12-13/21-23
#4-3798 (I.R. 9/96) . . . . .	14-15/23-24
#4-3799 (I.R. 9/96) . . . . .	13-14/21
#4-3799 (I.R. 9/96) . . . . .	13-14/21
#4-5192 (I.R. 9/97) . . . . .	12-13/19

# Section V - MOWER UNIT & COMPONENTS

## INTRODUCTION

This section covers all PRO Mower Units produced from December 1991 thru October 1999. Although its focus is primarily directed towards solving those mowing problems which are related to adjustments, it does include information covering the removal and repair of most deck components.

This section will begin with coverage of those mower units provided with the PRO Mid-Size Commercial Mowers, Series 0, which have a release date of Dec. 1991.

### MOWER UNITS:

PMA7360 & PMA7480, Series 0 (1991-92)  
PMA7361, 62 & PMA7481, 82, Series 1 & 2 (1993)  
PMA7364, PMA7484 & PMA7524, Series 4 (1994)

## 5.1 ADJUSTING HEIGHT OF CUT

(Early Models - See Page 5.8 for Later Models)

You can adjust the height of cut in three ways:

- A. Change cutting height of blades. Page 5.2.
- B. Change position of mower unit for different height of cut. Pages 5.3 & 5.4.
- C. Change the adjustment of the front caster wheels. Page 5.4.

### A. CHANGING CUTTING HEIGHT OF BLADES

To change cutting height of Blades, move the Spacers from under the Cutter Housing to above the Cutter Housing Pulley. Each Spacer moved above the Cutter Housing Pulley will provide an additional 1/4" of cutting height. **Never put any Spacers below Blade.** See Figure 5.2.

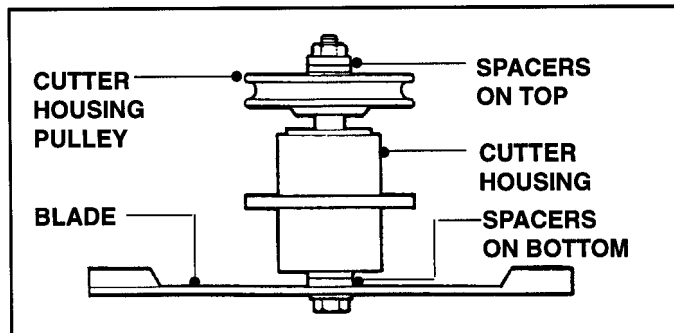
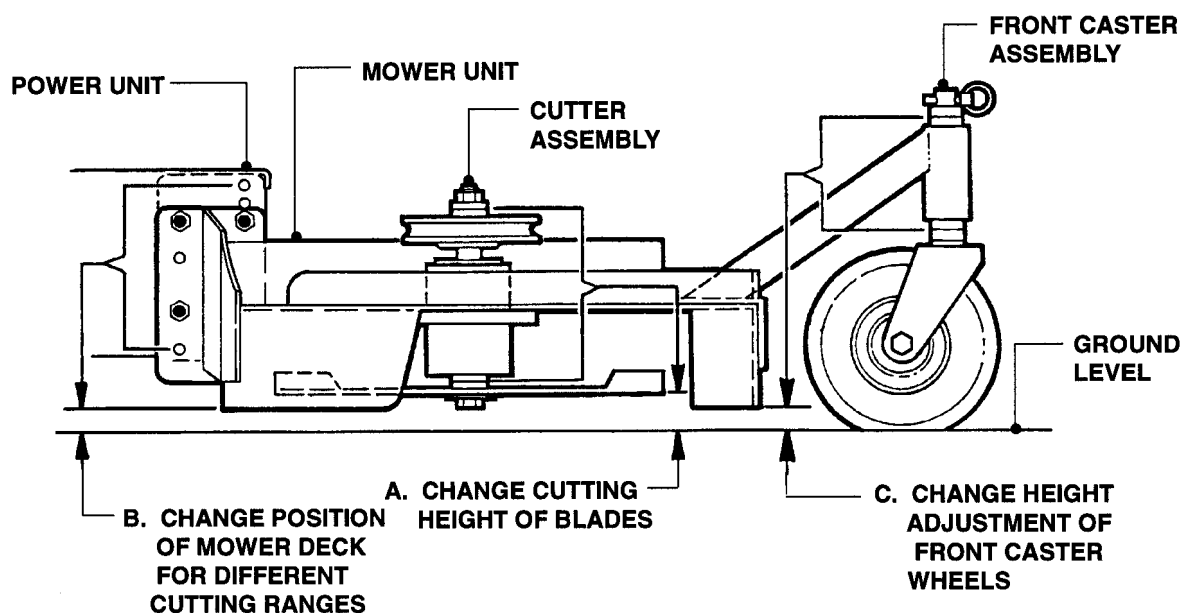


FIGURE 5.2

### NOTE

Changing the cutting height of the Blades does not change the deck ground clearance. If an undesirable cutting pattern results, then the mower deck height and Caster Wheels will have to be adjusted.

(THIS ILLUSTRATES THE THREE (3) WAYS TO ADJUST HEIGHT OF CUT)



MOWER UNITS PMA7360 & PMA7480 (Only one blade shown for clarity)

FIGURE 5.1

# Section V - MOWER UNIT & COMPONENTS

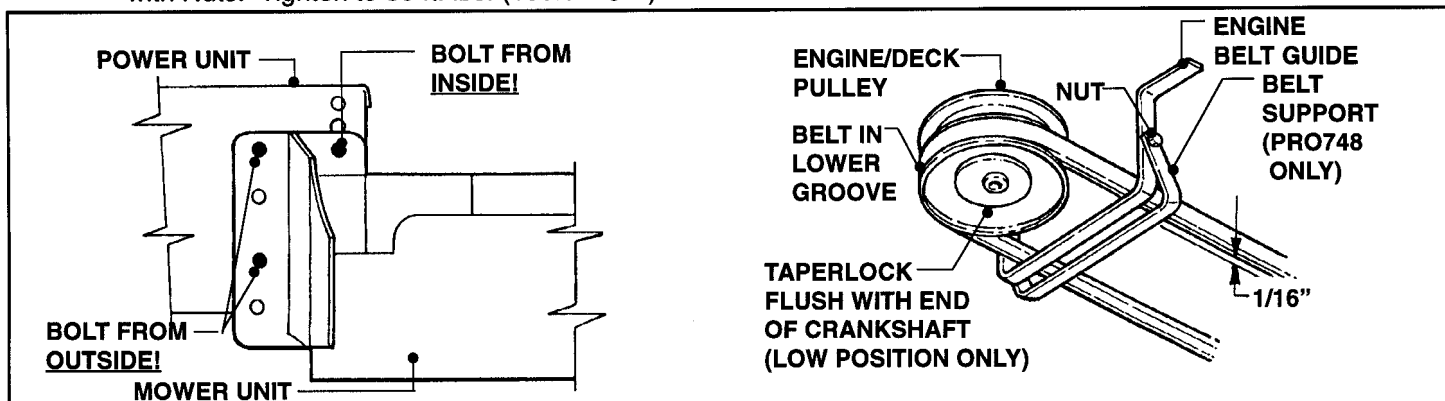
## B. CHANGING POSITION OF MOWER UNIT

1. The Mower Unit has three different positions for attaching it to the Power Unit.  
LOW POSITION: 1" to 2-1/2" Cutting Height  
MID POSITION: 1-7/8" to 3-3/8" Cutting Height  
HIGH POSITION: 3" to 4-1/2" Cutting Height  
See Figure 5.3.
2. Attach Mower Unit to Power Unit using existing hardware. Insert Bolts through shaded holes shown in each "Position" illustration and secure with Nuts. Tighten to 80 ft. lbs. (108.5 N•m).

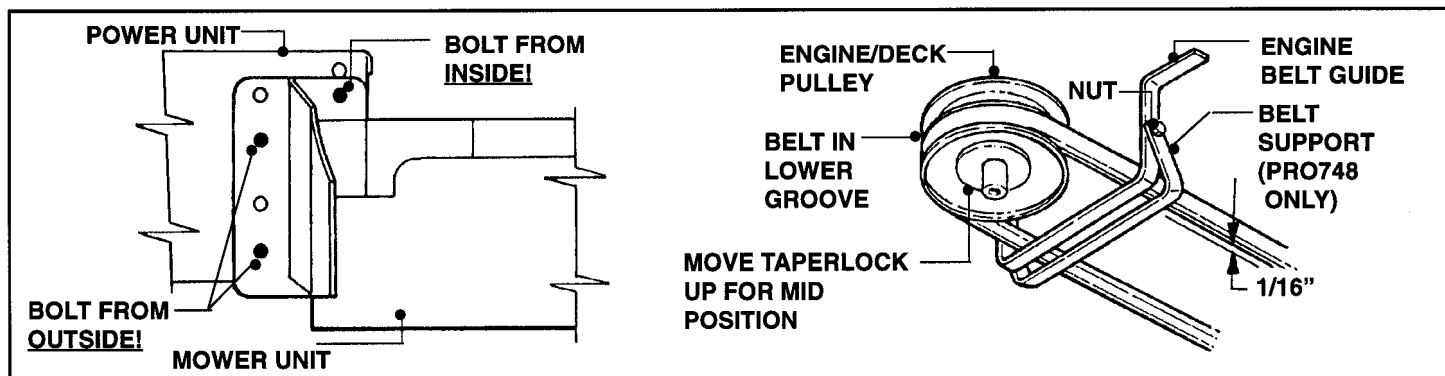
3. When adjusting Mower Unit to one of the three cutting heights, you must also reposition the Cutter Deck Belt on the Engine/Deck Pulley as shown below.

### NOTE

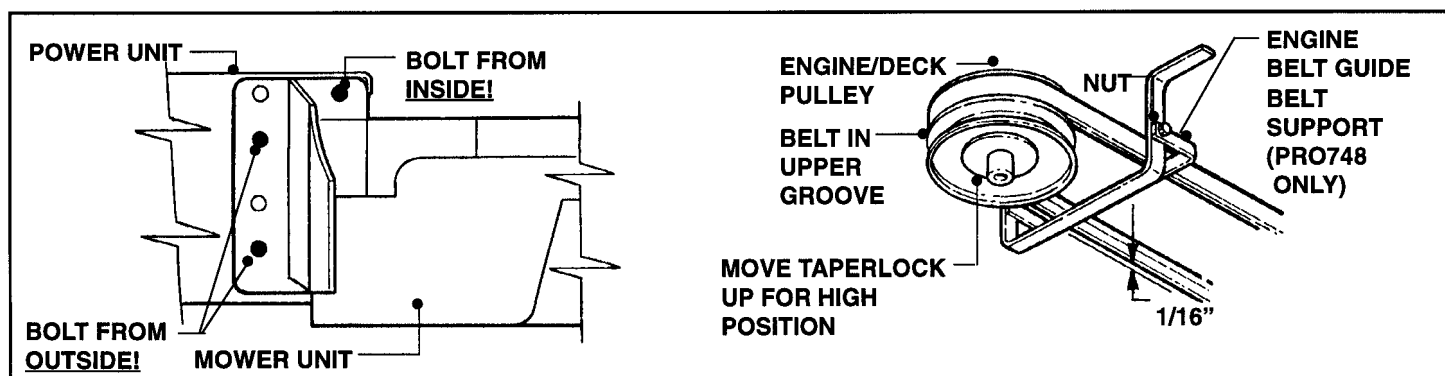
If Mower Unit is set to "Low Position", you must loosen taperlock bushing and lower Engine/Deck Pulley until it is flush with end of Crankshaft. Refer to Figure 5.3, top Illustration.



LOW POSITION: 1" to 2-1/2" CUTTING HEIGHT



MID POSITION: 1-7/8" to 3-3/8" CUTTING HEIGHT



HIGH POSITION: 3" to 4-1/2" CUTTING HEIGHT

FIGURE 5.3

## Section V - MOWER UNIT & COMPONENTS

4. Adjust the Belt Support (refer to Figure 5.3, Page 5.3) by loosening both Nuts and moving Support "UP" or "DOWN" until there is 1/16" clearance between belt and belt support. Tighten Nuts.
5. The Mower Deck Idler Pulley must be repositioned when in the "Low Position" height range. Remove Nut securing Idler Pulley, the 2 Washers, Idler Pulley and Belt Guide. Reassemble by placing the 2 Washers beneath Belt Guide - against the Idler Arm. Hold Belt Guide at 45° angle when securing Retaining Nut. See Figure 5.4.

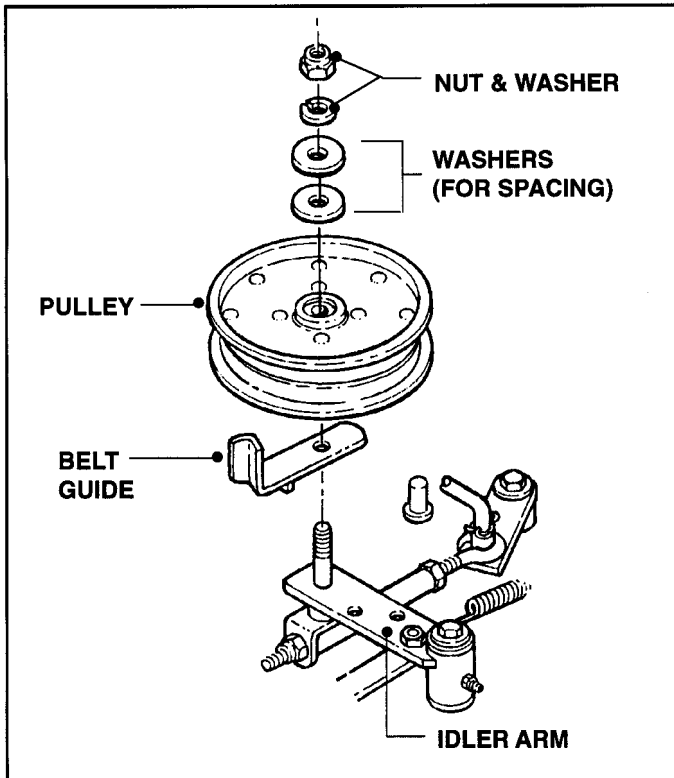


FIGURE 5.4

6. After repositioning Mower Unit, check Blade Engagement System for proper operation, readjust Blade Brake Systems and recheck Belt Tension. Refer to proper sections for correct procedures and specifications.

### NOTE

If repairing an earlier Model PRO, please check to see if the SNAPPER #6-1205 IDLER PULLEY and BLADE BRAKE KIT has been installed (Ref. SNAPPER SERVICE BULLETIN No. 1992-2, 4-3-92). If not, we recommend it be installed to increase performance in "Low-Range" operation.

### C. CHANGING HEIGHT ADJUSTMENT OF FRONT CASTER WHEELS

The Caster Wheel Assembly has three (3) 1/2" and one (1) 1/4" thick Spacers. When placed above or below Caster Support Tube, they raise or lower cutting height in 1/4" increments, thus providing a "Quick-Adjust" method.

1. Remove Retainer Pin from Caster Shaft. See Figure 5.5.

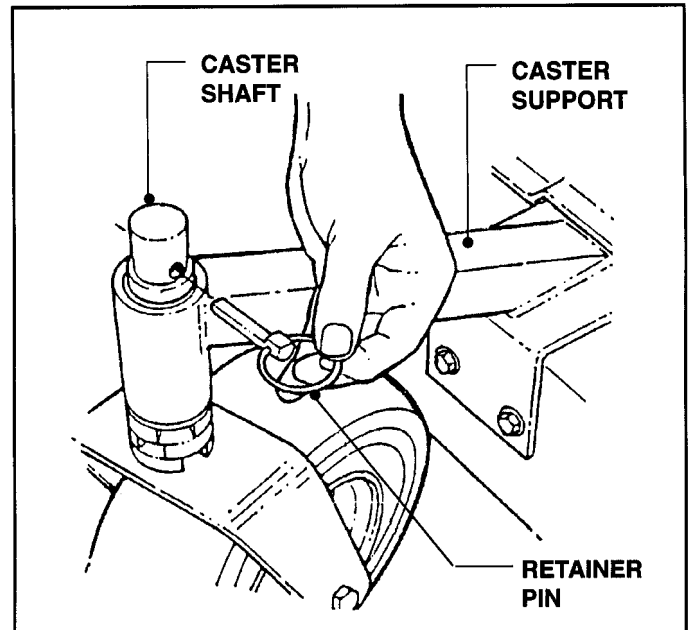
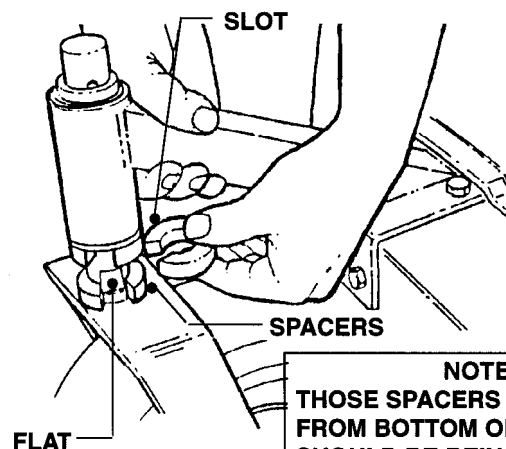


FIGURE 5.5

2. Lift up Caster Support while adding or removing bottom spacer. See Figure 5.6.

### NOTE

Remove (or add) Spacers by rotating Slots to align with flat area on Caster Shaft.



### NOTE

THOSE SPACERS REMOVED FROM BOTTOM OF CASTER SHOULD BE REINSTALLED AT TOP BEFORE INSERTING RETAINER PIN.

FIGURE 5.6



# Section V - MOWER UNIT & COMPONENTS

## 5.2 CHECKING CUTTER SPINDLE PULLEY HEIGHT

If the Blade Belts are out of alignment, check the height of the Spindle Pulley as follows:

- Remove Deck Belt Cover. Clean away all grass clippings and debris.
- Measure the distance from the top of the Belt to the floor of the Cutter Deck. Compare measurements to the charts below for the particular model cutting deck.

### NOTE

Measure as close to the Pulley as possible and avoid measuring to the Spindle Mount Reinforcement.

### PRO MOWER UNITS

Series 0 (12/91), Series 1 & 2 (7/93)

### SPINDLE PULLEY HEIGHT DIMENSION CHART

SPINDLE	36"	48"
RIGHT	3-11/32"	3-11/32"
CENTER*	N/A	2-19/32"
LEFT	3-11/32"	2-19/32"

### PRO MOWER UNITS

Series 4 (12/94)

### SPINDLE PULLEY HEIGHT DIMENSION CHART

SPINDLE	36"	48"	52"
RIGHT	3-27/32"	2-37/64"	2-37/64"
CENTER*	N/A	3-27/32"	3-27/32"
LEFT	3-27/32"	3-13/16"	3-27/32"

\* Measure from Top Belt.

- If the Spindle Pulley height requires adjustment, proceed to next step.

## 5.3 ADJUSTING CUTTER SPINDLE PULLEY HEIGHT

- Loosen the two Pulley Collar Mounting Bolts on each Pulley. See Figure 5.7.

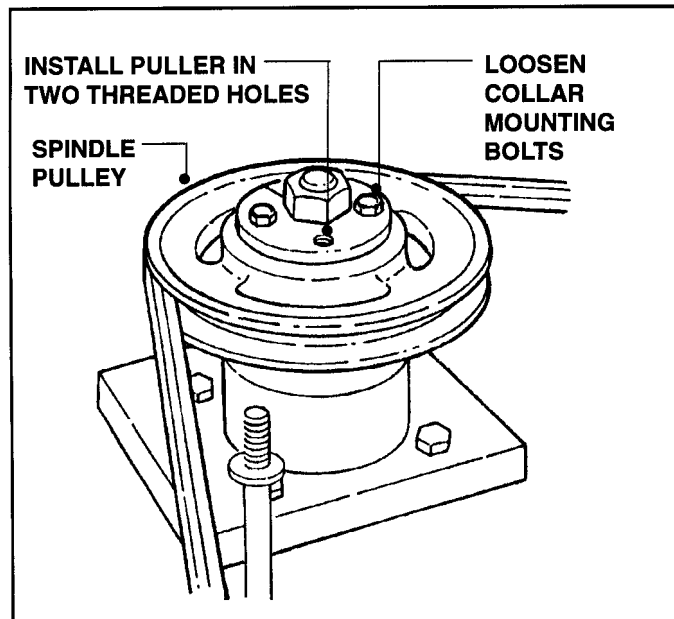


FIGURE 5.7

- Install a Pulley Puller with 1/4-20 Bolts and pull Collar loose from Pulley.
- Remove the Pulley Puller from Collar.
- While measuring from top of Belt to floor of Deck, move Pulley to the proper height. Refer to the SPINDLE HEIGHT DIMENSION CHART for proper dimension for each Pulley.
- Secure Collar to Pulley with Mounting Bolts loosened in Step A. Torque bolts to 115 in. lbs. Refer to Figure 5.7.

### NOTE

The Cutter Spindles used on the SNAPPER PRO HYDRO, PRO GEAR and PRO GEAR EXPRESS Mower Units (Dec. 1995 to present date) do not require Spindle Pulley adjustment. These Mower Units are listed below:

SP320  
SP360  
SP480  
SP520  
SPA360  
SPA480  
SPA520  
SPA610  
SPE360  
SPE480

# Section V - MOWER UNIT & COMPONENTS

## PRO MOWER UNITS, Series 0, 1 & 2

### 5.4 ENGINE BELT GUIDE/SUPPORT - PRO748

- A. STOP ENGINE!** Push Brake Clutch Lever forward to **ON** position.
- B.** Check clearance between Cutter Deck Belt (A) and Belt Support (B), if the clearance is greater or less than  $1/16"$  adjust Belt Support (B). Belt Support (B) is positioned beneath Cutter Deck Belt (A). See Figure 5.8.

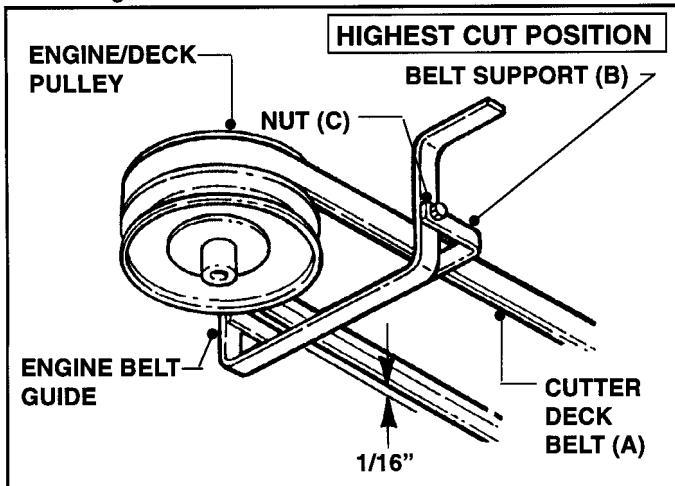


FIGURE 5.8

- C.** To adjust Belt Support (B), loosen both Nuts (C), then move Belt Support (B) up or down until there is  $1/16"$  clearance between Cutter Deck Belt (A) and Belt Support (B). Refer to Figure 5.8.
- D.** Pull Blade Clutch Lever rearward to **OFF** position.

### 5.5 CUTTER DECK BELT ADJUSTMENT

- A.** Check clearance between the Control Console and the Blade Clutch Lever while the lever is in the **ON** position, then the **OFF** position. There should be  $1/16"$  clearance in each position. See Figure 5.9.

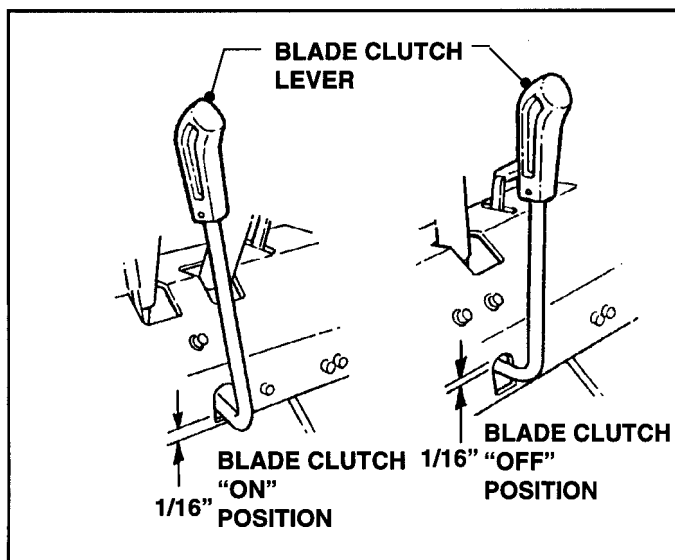


FIGURE 5.9

- B.** Pull Blade Clutch Lever rearward to the **ON** position and check for proper Cutter Deck Belt tension. (With 10 pounds of pressure being applied between the right and left pulleys, the Belt should move  $1/2"$ . **DO NOT OVER TENSION BELT!** See Figure 5.10.

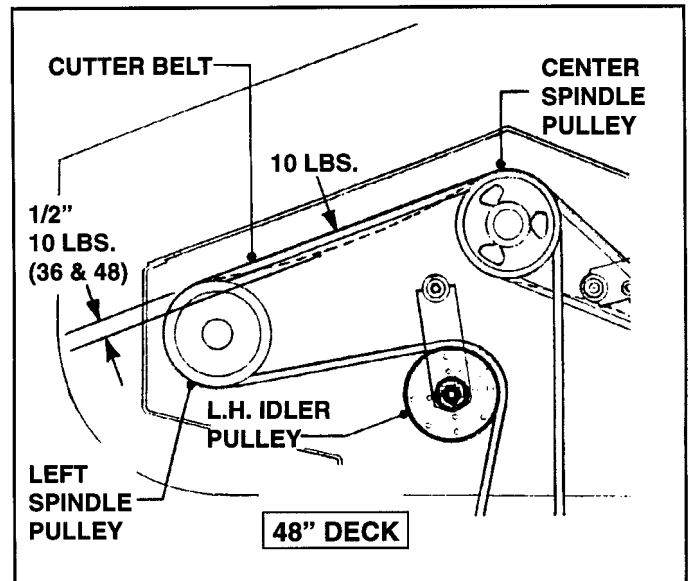


FIGURE 5.10

- C.** Adjust Cutter Deck Belt by loosening Jam-Nut (A) and Idler Return Nut (C), then tighten/loosen Nut (B) until proper belt tension is achieved. After adjustment is completed, tighten Idler Return Nut against Bracket (D). See Figure 5.11.

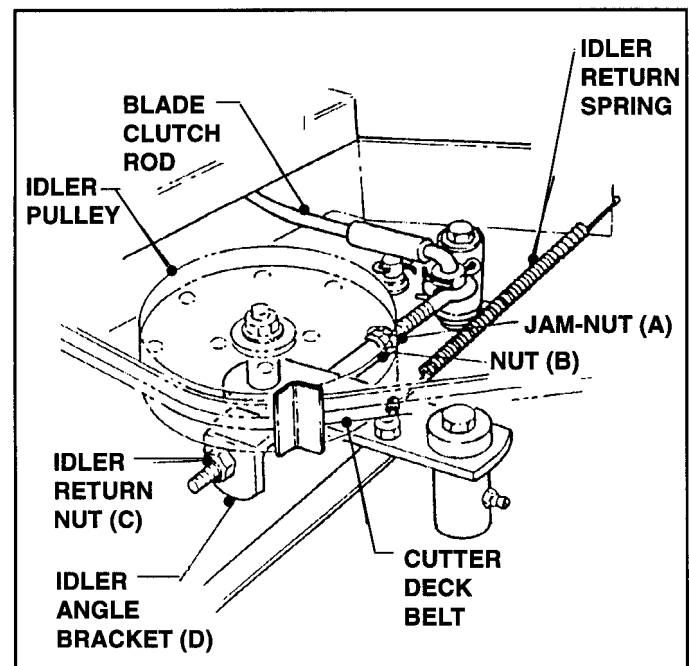


FIGURE 5.11

# Section V - MOWER UNIT & COMPONENTS (ADJUSTMENTS)

## PRO MOWER UNITS, Series 0, 1 & 2

### 5.6 BLADE TO BLADE BELT ADJUSTMENT

A. Blade Belt should move 1/2" with 10 pounds of pressure applied to belt between center and right Spindle Pulleys. **DO NO OVER TENSION BELT!** See Figure 5.12.

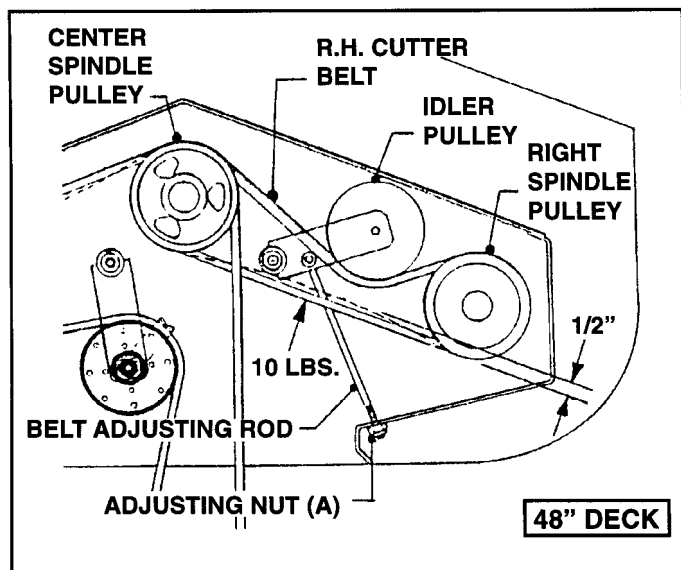


FIGURE 5.12

B. Belt adjustment is made by tightening/loosening Nut on Idler Linkage. Refer to Figure 5.12.

### 5.7 BLADE BRAKE ADJUSTMENT (PRO - 36" DECK)

Check the Blade Brake adjustment of the PRO 36 Deck, Series 0, 1 & 2 as follows:

- Pull Blade Clutch Lever rearward to the OFF position.
- Check the Deck Idler to see if there is a 1/8" gap between the Blade Assist Link (A) and Blade Disengagement Stop (B). See Figure 5.13.

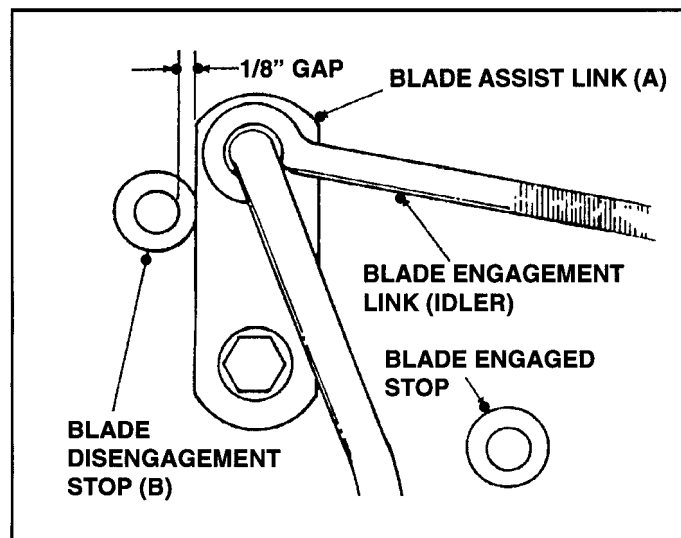


FIGURE 5.13

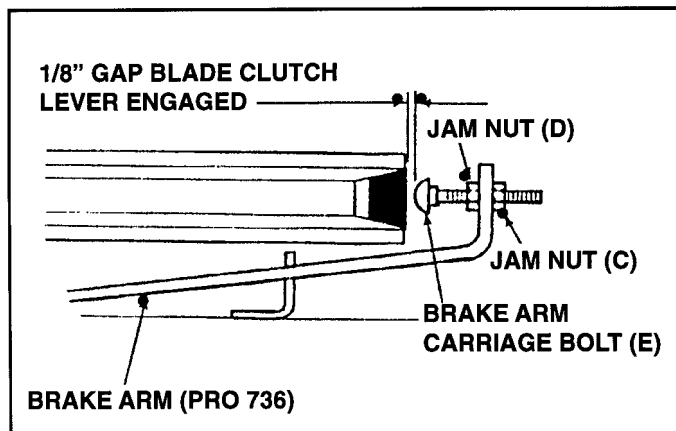


FIGURE 5.14

- Adjust the Blade Brake Carriage Bolt (E) IN or OUT until there is a 1/8" gap between the Link (A) and Stop (B). See Figures 5.13 & 5.14.
- Tighten Jam Nut (C). (See Figure 5.14).

## PRO748, Series 0, 1 & 2

### 5.8 BLADE BRAKE ADJUSTMENT (PRO - 48" DECK)

(Follow Step A. in 5.7 and refer to Figures 5.13 & 5.14)

- Loosen Jam Nut (F) on Brake Arm Carriage Bolt. See Figure 5.15.

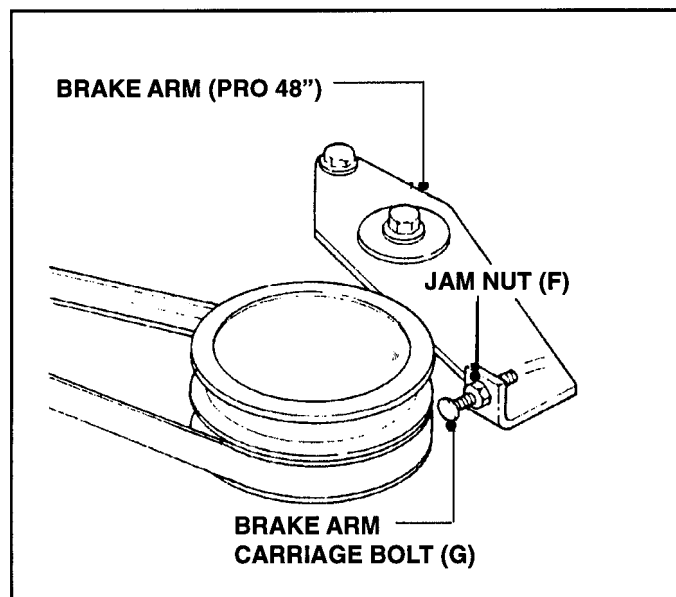


FIGURE 5.15

- Adjust the Blade Brake Carriage Bolt IN or OUT until there is a 1/8" gap between the Link (A, Fig. 5.13) and Stop (B, Fig. 5.13).
- Tighten Jam Nut (F).

# Section V - MOWER UNIT & COMPONENTS

## 5.9 ADJUSTING HEIGHT OF CUT (FIXED DECKS) (LATER Models - SP320, SP360, SP480 & SPE360 Series 0, 1996/1997)

You can adjust the height of cut in three ways.

1. Change cutting height of blades.
2. Change position of mower unit for different height of cut.
3. Change the adjustment of the front caster wheels.

### A. CHANGING CUTTING HEIGHT OF BLADES

To change cutting height of Blades, move the Spacers from under the Cutter Housing to above the Cutter Housing Pulley. Each Spacer moved above the Cutter Housing Pulley will provide an additional 1/4" of cutting height. **Never put any Spacers below Blade!** See Figure 5.16.

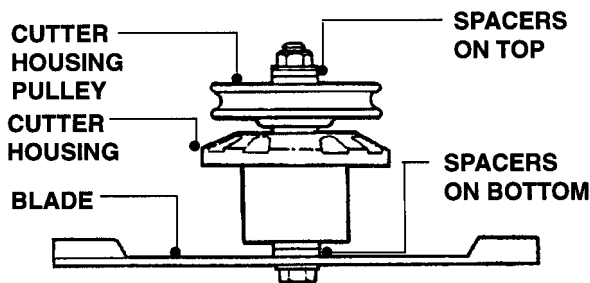


FIGURE 5.16

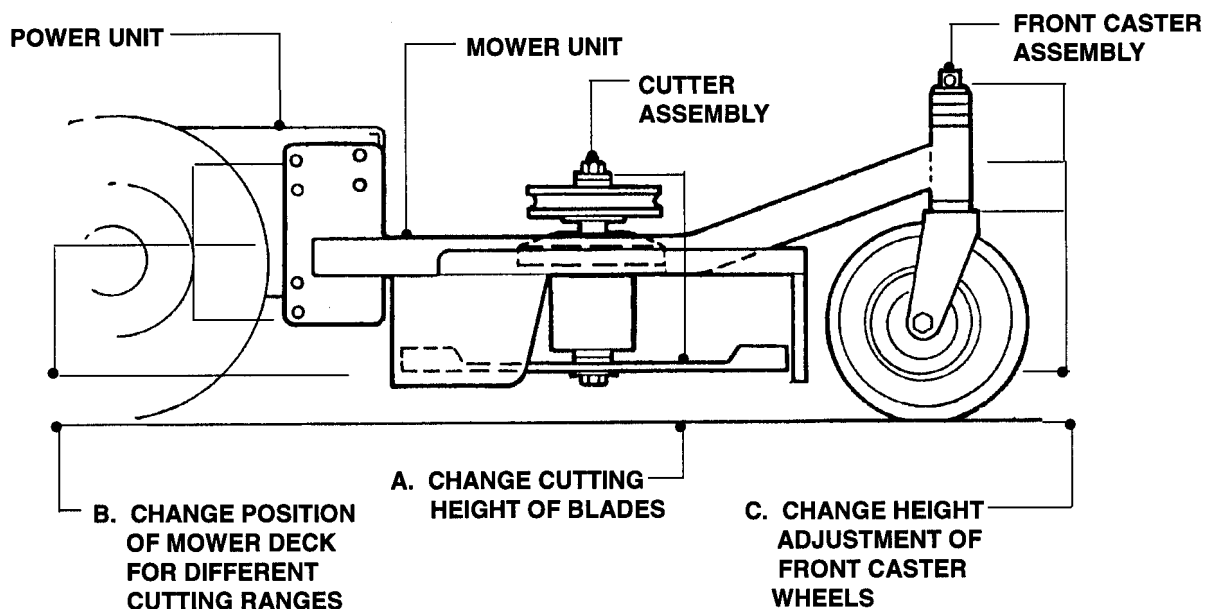
### NOTE

Changing the cutting height of the Blades does not change the deck ground clearance. If an undesirable cutting pattern results, then the Mower Deck Height and Caster Wheels will have to be adjusted.

### B. CHANGING POSITION OF MOWER UNIT

1. The Mower Unit has four different positions for attaching it to the Power Unit:  
LOW CUT - 1-1/2" to 2-1/2" Cutting Height  
MIDDLE LOW CUT - 2-1/4" to 3-1/4" Cut Height  
MIDDLE HIGH CUT - 3" to 4" Cutting Height  
HIGH CUT - 3-3/4" to 4-3/4" Cutting Height  
See Figure 5.17 & 5.18.
2. Make sure the Spacers on the Caster Wheels are moved up or down as shown to correspond with the bolt positions to keep deck level. Once a desired cutting height is reached, attach the mower deck to the power unit by installing 3 bolts on each side in selected height-of-cut holes. Tighten bolts to 70 to 80 foot pounds torque (95.9 N.m to 108.5 N.m). See "MOVING POSITIONS", Figure 5.18, on Page 5.9.

### ILLUSTRATIONS SHOWING THREE (3) WAYS TO ADJUST HEIGHT

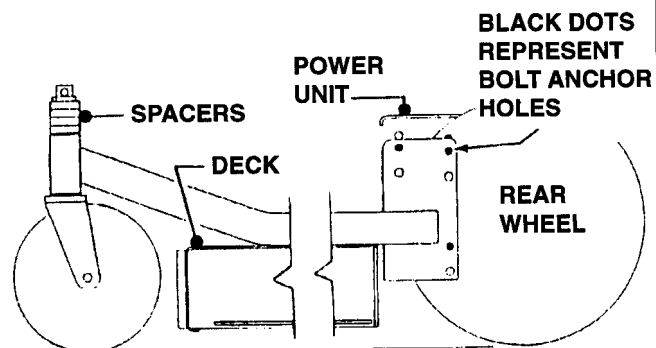


MOWER UNITS SP320, SP360, SP480 & SPE360 (Only one blade shown for clarity)

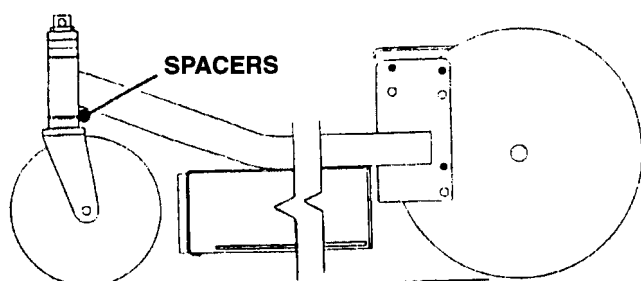
FIGURE 5.17

# Section V - MOWER UNIT & COMPONENTS

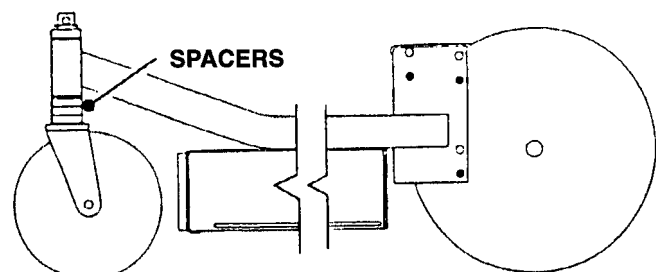
## MOWING POSITIONS (FIXED DECK)



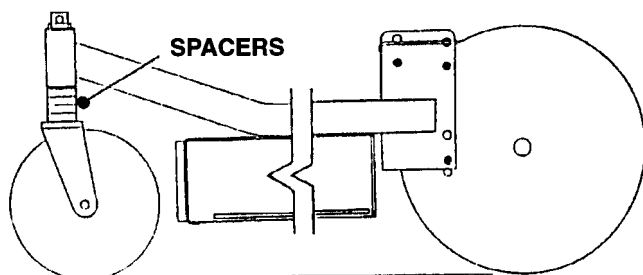
LOW CUT 1-1/2" to 2-1/2"



MIDDLE LOW CUT 2-1/4" to 3-1/4"



MIDDLE HIGH CUT 3" to 4"



HIGH CUT 3-3/4" to 4-3/4"

FIGURE 5.18

## C. CHANGING HEIGHT ADJUSTMENT OF FRONT CASTER WHEELS

The Caster Wheel Assembly has three (3) 1/2" and one (1) 1/4" thick Spacer. When placed above or below Caster Support Tube, they raise or lower cutting height in 1/4" increments, thus providing a "Quick-Adjust" method.

1. Remove Retainer Pin from Caster Shaft. See Figure 5.19.

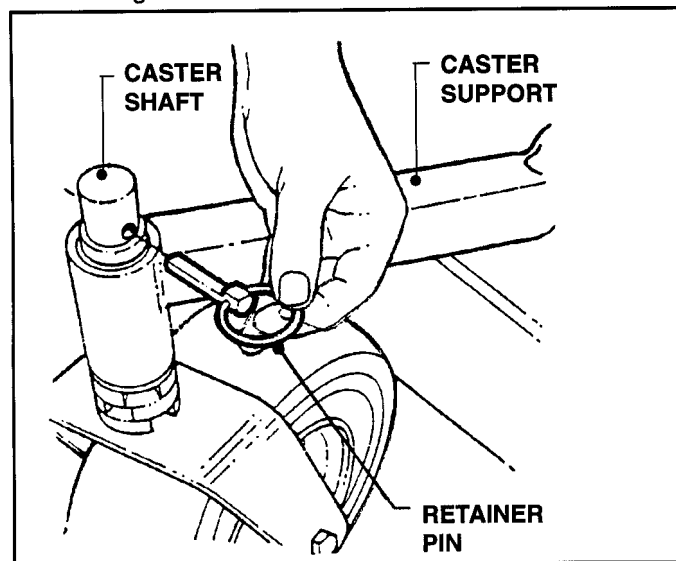


FIGURE 5.19

2. Lift up Caster Support while adding or removing bottom Spacer. See Figure 5.20.

### NOTE

Remove (or add) Spacers by rotating Slots to align with flat area on Caster Shaft.

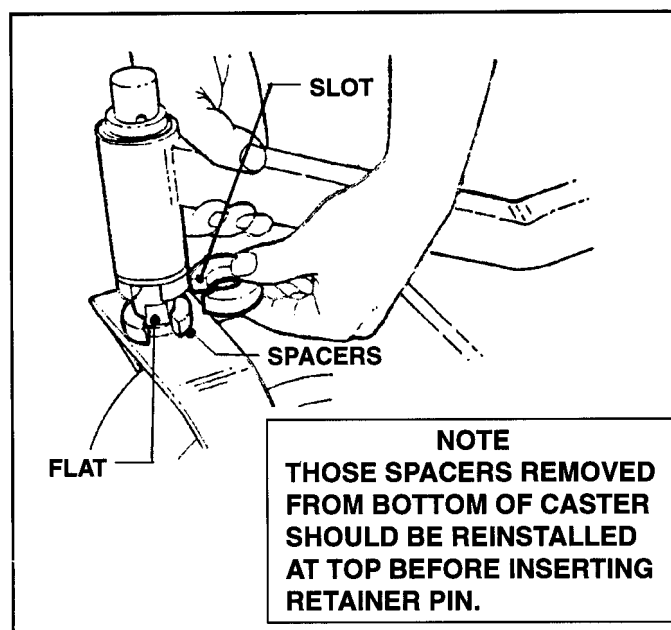


FIGURE 5.20

## Section V - MOWER UNIT & COMPONENTS

### 5.10 ADJUSTING HEIGHT OF CUT (ADJUSTABLE DECKS)

(Later Models - SPA360, SPA480, SPA520 & SPA610 Series 0, 1995/1999)

- A. The mower deck should be mounted in the lowest holes (low cut) on the Power Unit. See Figure 5.18.
- B. To adjust height of cut, rotate both cranks located on each side of deck. Observe the height of cut decal located on the side of the mounting plates and place the pointer in the same desired position on both sides. See Figure 5.21.

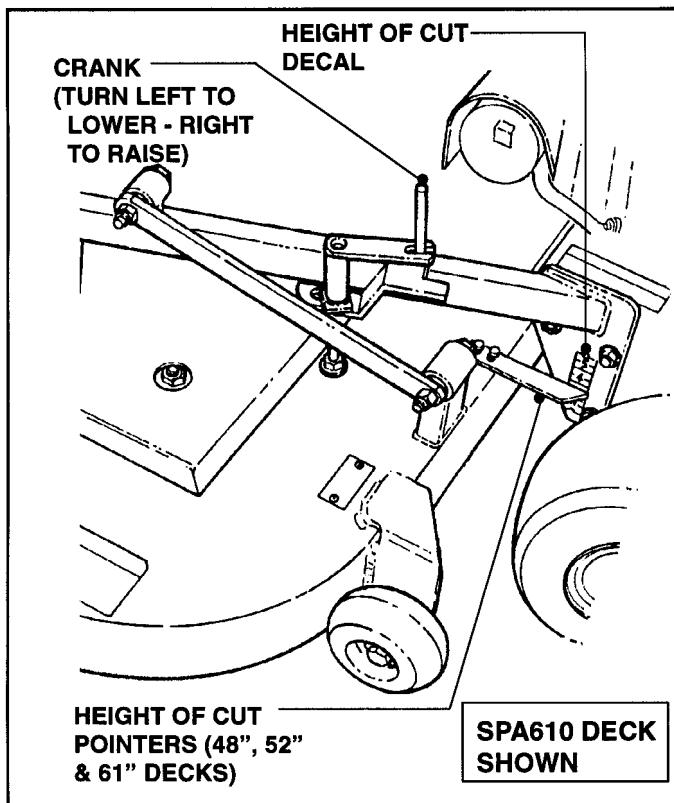


FIGURE 5.21

- C. If pointers are in the correct position and you still have an uneven cut, follow these instructions to correct the problem:
  - 1. Rotate outer blades to point toward the sides of the deck.
  - 2. Measure the distance from blade tip to the ground. Measure both outside blades. This measurement should be the same as what the pointer reads on both sides.
  - 3. If measurement is not the same, then bend both pointers up or down until they are at the same setting on the height of cut decals as the blade distance from the ground.

# Section V - MOWER UNIT & COMPONENTS

## 5.11 REPAIRING DAMAGED DECKS

If a deck develops a broken weld or is punctured due to an accident while mowing or during transport, repair deck as follows:

### A. WELDING DECKS

When welding commercial-type decks (PRO, etc.), the use of an Electric Stick Welder is recommended. Use 6013 Welding Rods with the welder "Heat" set at 90 to repair damage.

1. Thoroughly clean area to be welded. Use a grinder to dress parts to be joined.
2. Making sure that the parts are properly aligned, clamp or otherwise secure them in position.
3. Tack-weld the area as required to prevent warping. Check alignment frequently.
4. Weld area closed.
5. Grind and sand welded area.
6. Prime and paint.

#### NOTE

When welding small-type decks or deck components fabricated from thinner metals, the use of a Wire Welder is recommended. Use .035 Wire for most jobs.

### B. STRAIGHTENING BENT DECKS

If a deck becomes bent during operation or transport, it can usually be restored to near-original condition by a mechanic who is familiar with metalworking. Observe the following when straightening decks.

1. Avoid using a torch to "relieve" the damaged area for straightening. This will cause the heated area to lose temper.
2. As the deck is being straightened, frequently check the "level" "vertical" and "alignment" points as shown in Figure 5.22.

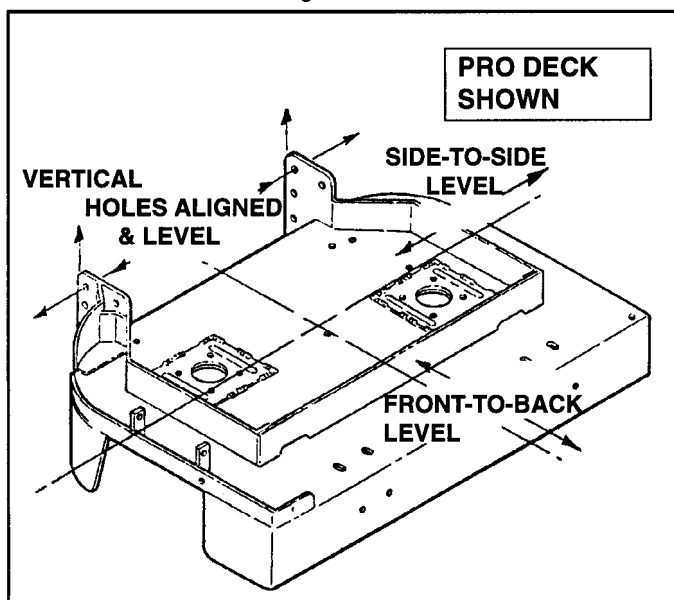


FIGURE 5.22

3. If the deck skirt is crimped due to a bent top deck plate, then the crimped area must be "worked-out" with a shop hammer and dolly in conjunction with the straightening of the deck plate.

#### NOTE

To avoid repainting after straightening a deck, the paint can *sometimes* be preserved by coating the affected area with GP grease before beginning the straightening process. Wipe off excess grease after completing job.

### C. INSTALLATION OF No. 4-6214 LIFT WASHER WELDMENT FOR ADJUSTABLE (SPA) DECKS

This part is for SPA decks. It has been designed to protect the Lift Studs (Part No. 2-9259) from thread damage. Installation is as follows:

1. Place four (4) evenly-sized blocks under front and rear of deck.
2. Turn height-adjusting handles to the left until the deck is resting evenly on the blocks. Remove handles.
3. Remove the square washers. See Figure 5.23.

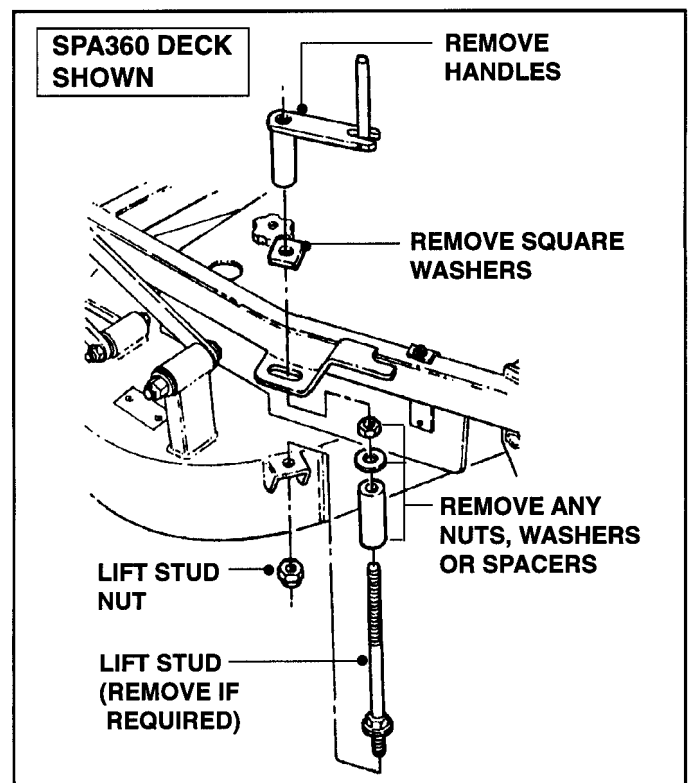


FIGURE 5.23

4. Remove any nuts, washers or spacers that are between the deck and deck frame.

#### NOTE

In some cases, the Lift Stud must be removed in order to remove those parts mentioned in Step 4 above.

## Section V - MOWER UNIT & COMPONENTS

5. Insert the Lift Washer Weldments (No. 4-6214) over the Lift Studs as shown in Figure 5.24.

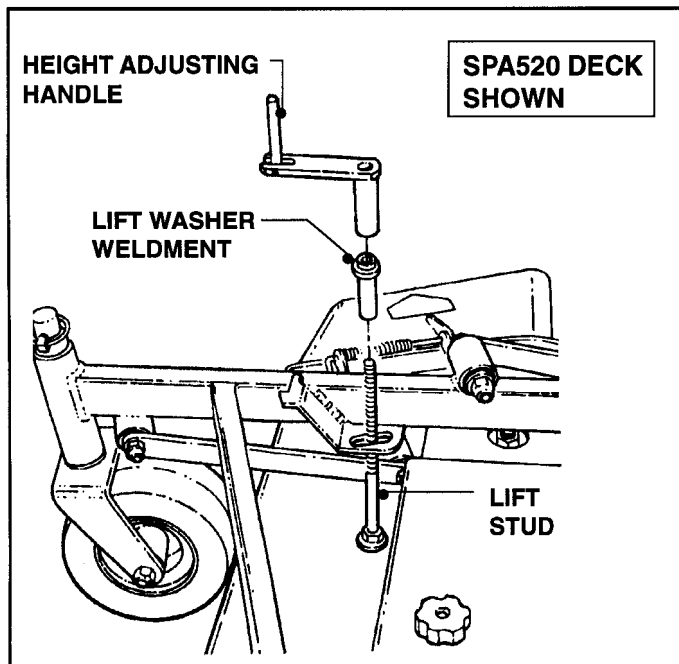


FIGURE 5.24

6. Screw height-adjusting handles onto Lift Studs (Do not tighten - proceed to 5.2, Leveling Adjustable Height Decks).

### 5.12 LEVELING ADJUSTABLE HEIGHT DECKS (PRO Mower Decks)

- Remove belt cover and cutter deck drive belt.
- Place evenly-sized blocks under front and rear of deck.
- Run height-adjusting handles all-way "UP" until deck is resting on blocks.
- Loosen all deck hanger rod connections. See Figure 5.25.
- Check to make sure that deck is resting on block at all points.
- Tighten the hanger rod connections.
- Adjust deck to desired height of cut.

#### NOTE

Deck leveling operation must be performed on a level surface.

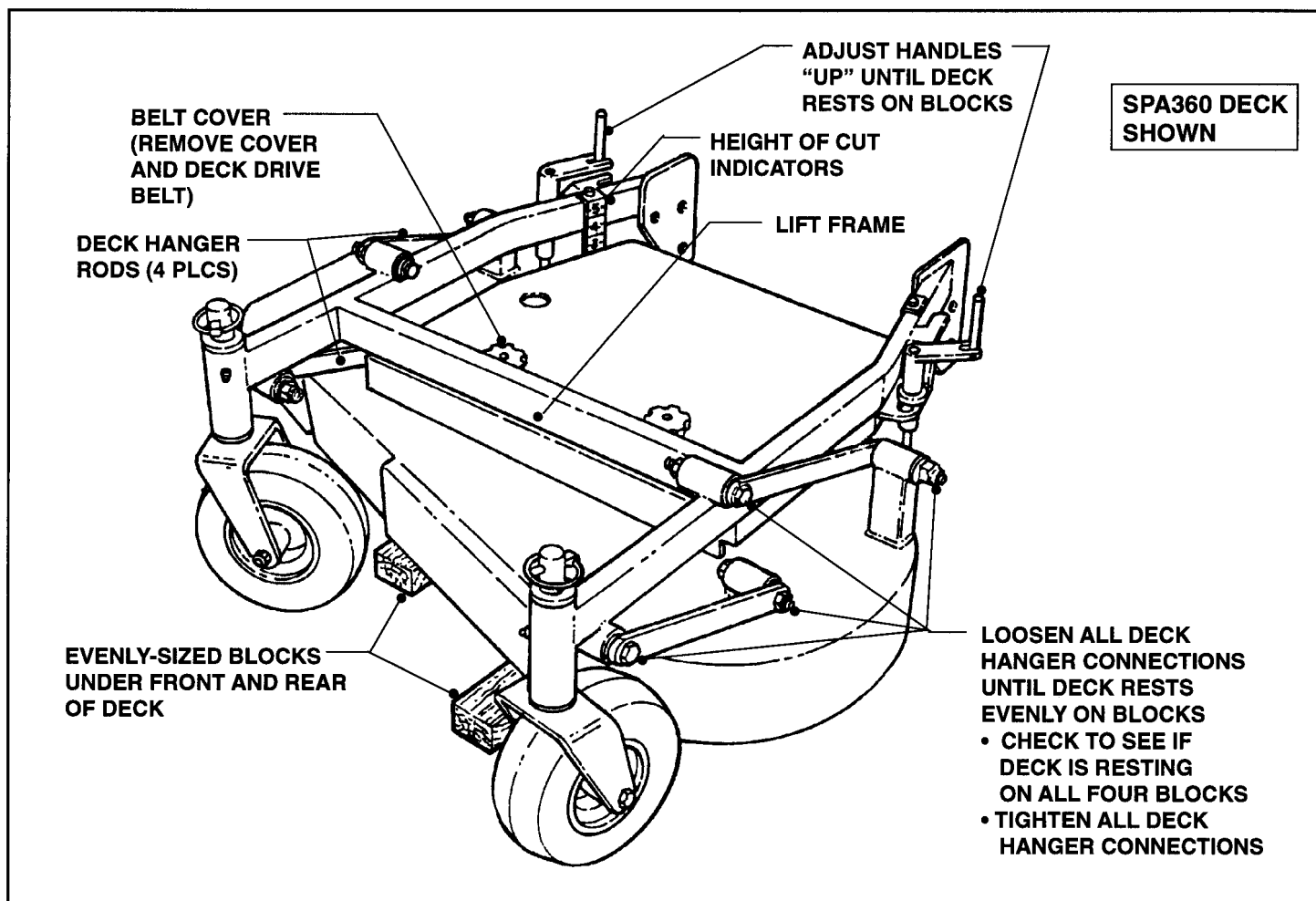


FIGURE 5.25



# Section V - MOWER UNIT & COMPONENTS

## 5.13 BELT TENSION ADJUSTMENT

The following information covers all PRO Mower Decks from 1991 through 1999.

### A. CUTTER BELT TENSION (36" DECK - 1991/1993)

1. Push Blade Control Lever forward to "ON" position.
2. Remove Mower Deck Cover.
3. Apply 10 pounds of pressure between the right and left Spindle Pulleys as shown in Figure 5.26. The Belt should move no more than 1/2".

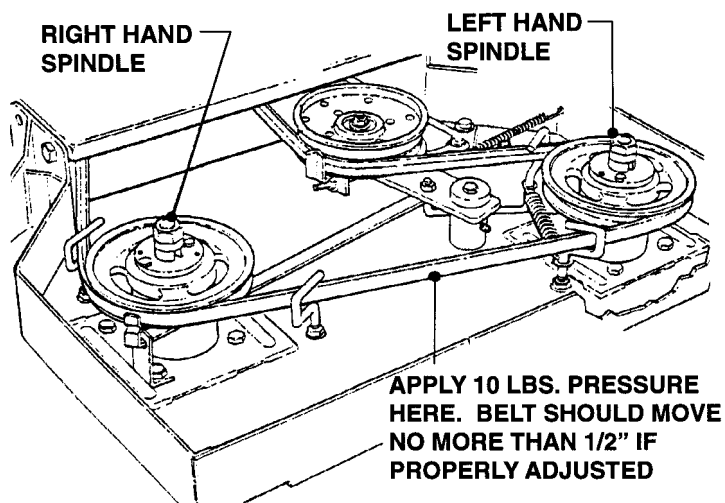


FIGURE 5.26

4. If Belt needs adjusting, tighten or loosen the Idler Pulley until Belt tension is correct. See Figure 5.27.

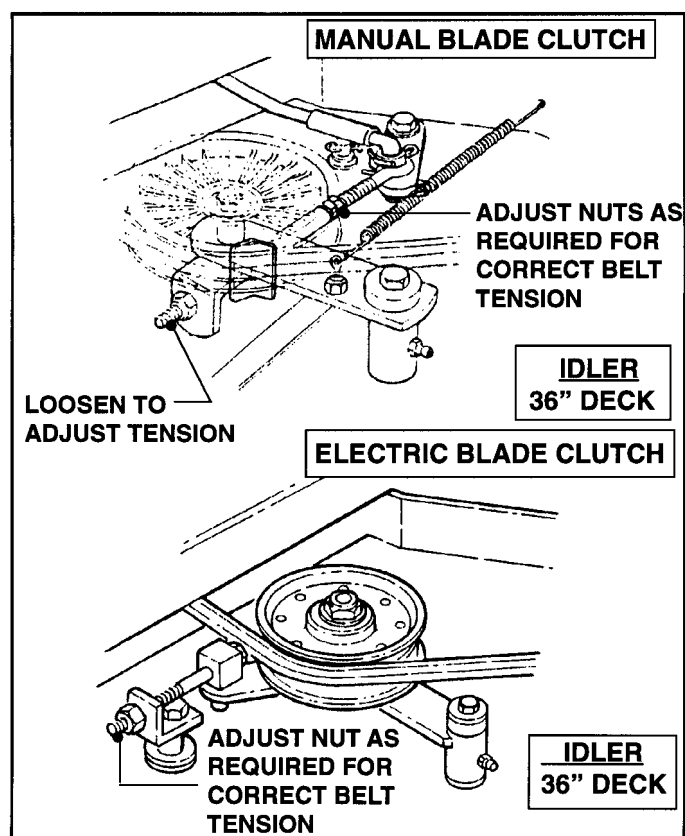


FIGURE 5.27

### B. CUTTER BELT TENSION (36" DECK - 1994/1995)

1. Remove Mower Deck Cover.
2. Apply 10 pounds of pressure between the right and left Spindle Pulleys as shown in Figure 5.28. The Belt should move no more than 1/2".

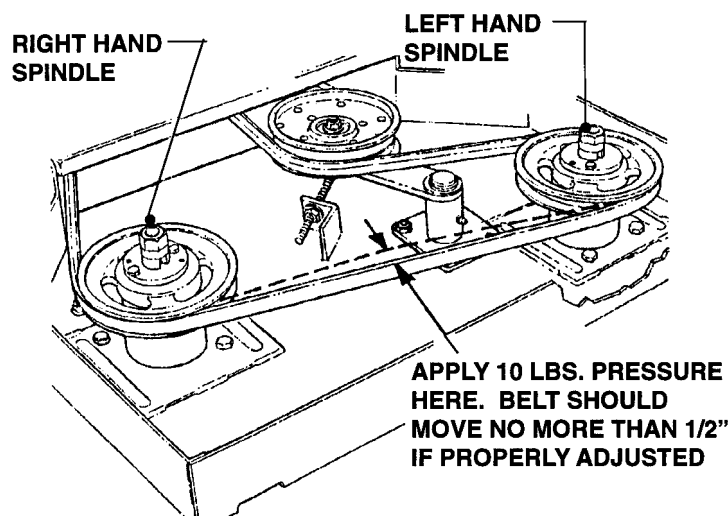


FIGURE 5.28

3. If Belt needs adjusting, tighten or loosen the Idler Pulley until Belt tension is correct. See Figure 5.29.

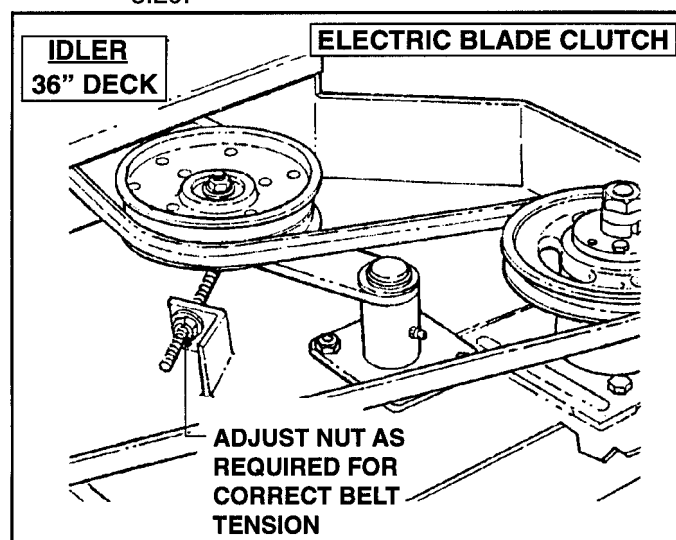


FIGURE 5.29

### C. CUTTER BELT TENSION (36" DECK - 1996/1999)

1. Remove Mower Deck Cover.
2. Apply 10 pounds of pressure between the right and left Spindle Pulleys. The Belt should move no more than 1/2".
3. If Belt needs adjusting, replace Idler Spring, (Part No. 2-9278).
4. Or, replace Cutter Belt, Part No:
  - a. 3-5710 - SP360 MOWER UNIT, 1995
  - b. 3-5710 - SPA360 MOWER UNIT, 1995
  - c. 3-5710 - SPE360 MOWER UNIT, 1996/97

# Section V - MOWER UNIT & COMPONENTS

## 5.14 BELT TENSION ADJUSTMENT

(48", 52" & 61" DECKS)

The following information covers all PRO Mower Decks from 1991 through 1999.

### A. CUTTER BELT TENSION (48" DECK-1991/1993)

1. Check clearance between Blade Clutch Lever and Control Console with Blade Clutch Lever in the OFF and ON position. There should be a 1/16" minimum at bottom of slot (ON position) and top of slot (OFF position). Adjust Blade Clutch Lever if required. Refer to Section V, Page 5.7 of this Manual for procedure. See Figure 5.30.

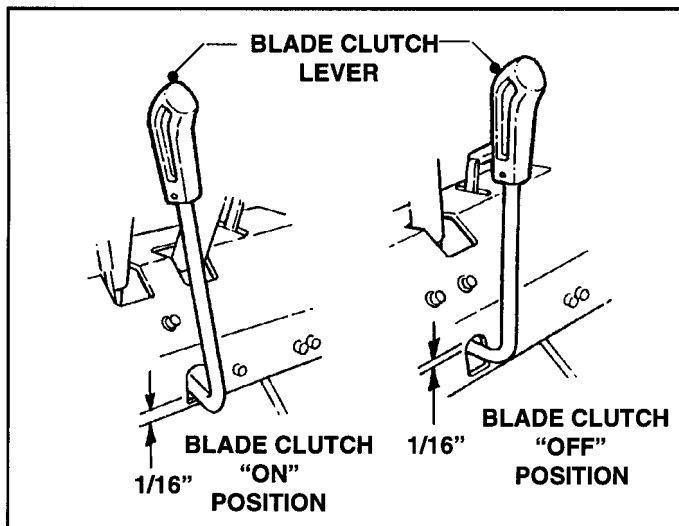


FIGURE 5.30

2. Pull Blade Clutch Lever rearward to the ON position and check for proper Cutter Belt tension.
3. Apply 10 pounds pressure to the middle of the Belt between the center and left hand Spindle Pulleys as shown in Figure 5.31. The Belt should move no more than 1/2".

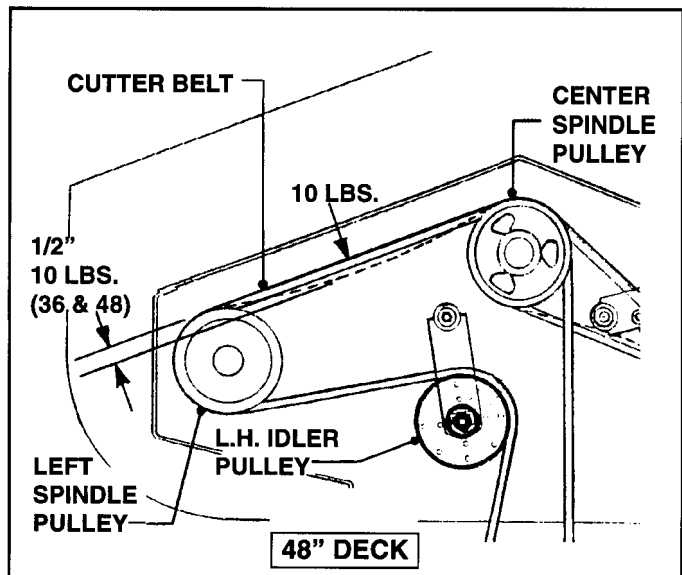


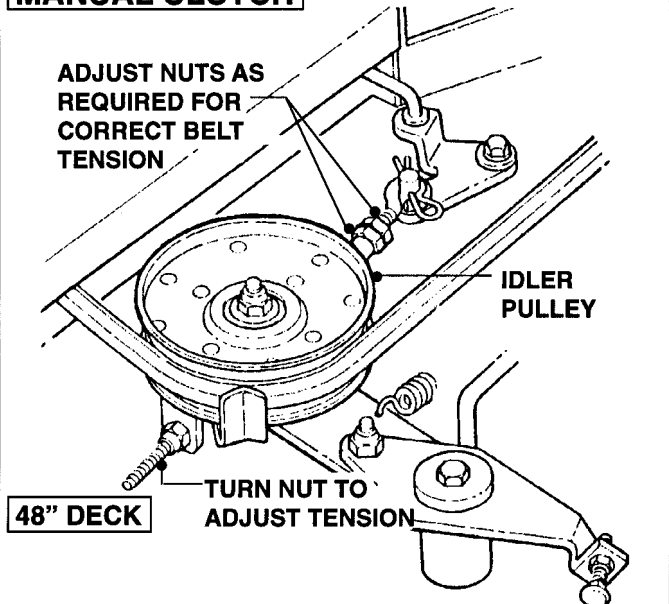
FIGURE 5.31

### NOTE

The 1991 thru 1993 PRO DECKS (48", 52" & 61") can be readily identified by taking note of the position of the Blade/Blade Idler - it is located in front of the Belt. See Figure 5.33, Page 5.5.

4. If Belt needs adjusting, tighten or loosen the Idler Pulley until Belt tension is correct. See Figure 5.32.

### MANUAL CLUTCH



### ELECTRIC CLUTCH

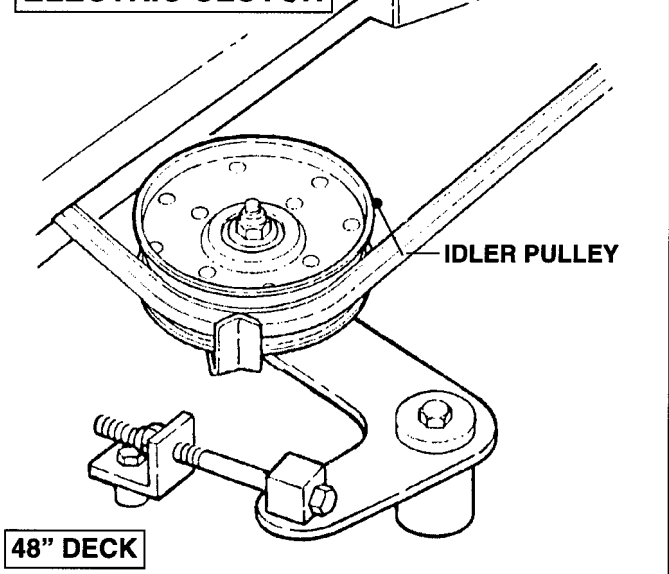


FIGURE 5.32

### B. R.H. CUTTER BELT TENSION (48" DECK - 1991/1993)

1. Check tension of Belt between center and right hand Spindle Pulleys. The Belt should move no more than 1/2". Refer to Figure 5.31.
2. If Belt needs adjusting, tighten or loosen the nut on the Belt Adjusting Rod. See Figure 5.33.

# Section V - MOWER UNIT & COMPONENTS

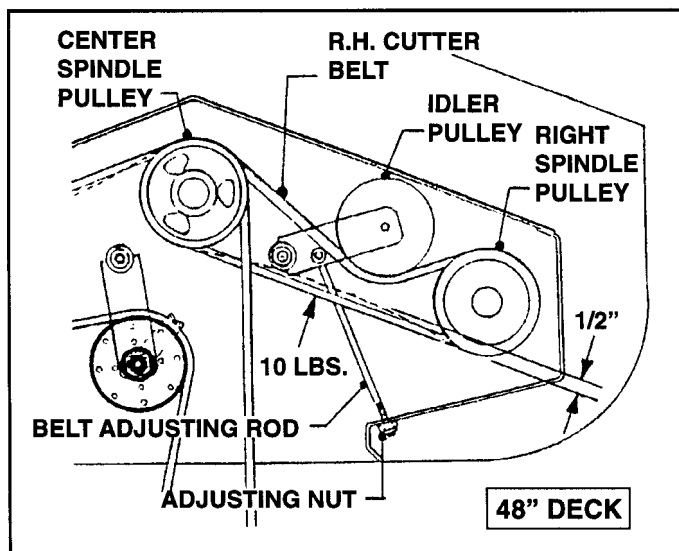


FIGURE 5.33

## C. CUTTER BELT TENSION (48" DECK - 1994/95)

1. Apply 10 pounds pressure to the middle of the Belt between the center and left hand Spindle Pulleys as shown in Figure 5.34. The Belt should move no more than 1/2".

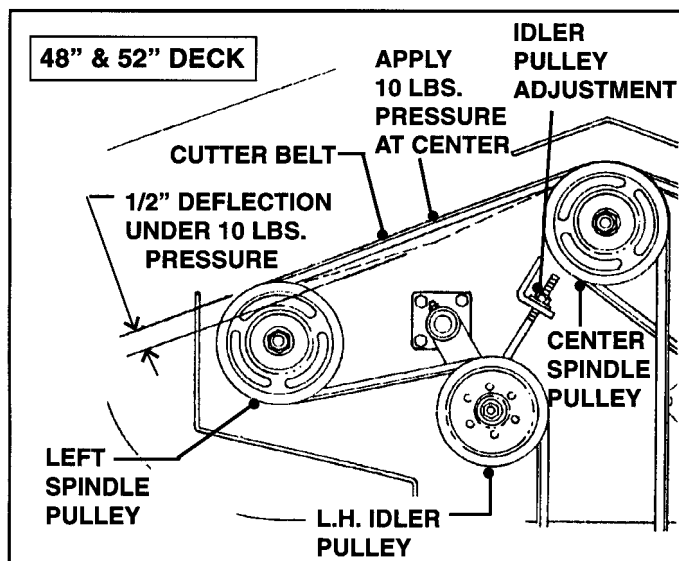


FIGURE 5.34

If Belt needs adjusting, tighten or loosen the Idler Pulley until Belt tension is correct.

## D. R.H. CUTTER BELT TENSION (48" DECK - 1994/1995)

1. Check tension of Belt between center and right hand Spindle Pulleys. The Belt should move no more than 1/2". Refer to Figure 5.34.
2. If Belt needs adjusting, tighten or loosen the nut on the Belt Adjusting Rod. See Figure 5.35.

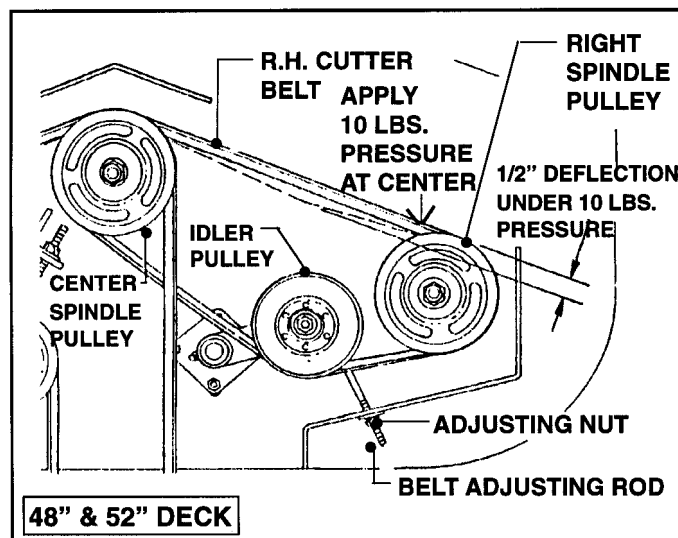


FIGURE 5.35

## E. CUTTER BELT & BLADE/BLADE BELT TENSION (48", 52" & 61" DECKS - 1996/1999)

### NOTE

All PRO7 Series Decks produced after 1995 are "Self-Adjusting" - they employ spring-loaded idlers to maintain a constant belt tension at the appropriate deflection level.

To check Belt Tension, proceed as follows:

1. Remove Mower Deck Cover.
2. Apply 10 pounds or pressure between Spindle Pulleys. The Belt should move no more than 1/2".
3. If either Belt is out of adjustment - LESS or MORE than 1/2" deflection - check the specific Idler Spring for problems such as:
  - a. **SPRING IS TOO TIGHT**  
Remove Idler Spring and place it loosely in a vise. Insert a large, flat-blade screwdriver between two spring coils and twist to spread the coils. Remove spring, reinstall and test belt deflection. Repeat procedure as required.
  - b. **SPRING IS TOO LOOSE**  
Remove Idler Spring and place it tightly in a vise in such a manner that the hooked ends may be gripped with vise-grips. Shorten one, or both, spring-ends by lessening the radius and/or length of the hook(s). Remove Spring, reinstall and test belt deflection. Repeat procedure as required.
4. Replace Idler Spring, if required (Part # 2-9278) or Extension Primary Idler Spring (Part #2-9272).
5. Replace Belt(s) as required.

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

# Section VI

## DECK IDLER ASSEMBLIES & BLADE BRAKES

### CONTENTS

<b>ITEM</b>	<b>PAGE No.</b>
Introduction . . . . .	6.2
1991 - 93 (Ref. Parts Manual #06920, 06921 & 06922) . . . . .	6.2
Idler Assembly - Models PMA7360,361,362 & PMA7480,481,482 . . . . .	6.2
Blade Brake - Models PMA7360,361,362 & PMA7480,481,482 . . . . .	6.2 - 6.3
Deck Brake Arm - Model PMA7362 . . . . .	6.3
Blade/Blade Idler Assembly - Models PMA7480,PMA7481 & PMA7482 . . . . .	6.3
Idler Assembly - Models PMA7364,PMA7484 & PMA7524 . . . . .	6.4
Blade/Blade Idler Assembly - Models PMA7484 & PMA7524 . . . . .	6.5
Idler Assembly - Model SP320 . . . . .	6.4 - 6.5
Idler Assembly - Models SP360 & SPA360 . . . . .	6.5
Blade/Blade & Deck Idler Assembly - SP480,SPA480,S0A520 & SPA610 . . . . .	6.5
Service Notes . . . . .	6.6

# Section VI - DECK IDLER ASSEMBLIES & BLADE BRAKES

## 6.1 INTRODUCTION

This section covers the PRO Deck Idler Assemblies and Blade Brakes from 1991 thru the present. It will provide you with the information required for the inspection, adjustment and repair/replacement of each assembly.

### 1991 - 93 (Ref. Parts Manuals #06920,06921,06922)

The PRO Mower Units of this period ('91-'93) feature two similar Deck Idler and Blade/Brake Idler Assemblies with integral Blade Brake components as part of their function. They are as follows:

## 6.2 IDLER ASSEMBLY - PMA7360,PMA7361,PMA7362 & PMA7480,PMA7481,PMA7482

If the Mower Deck Belt will not maintain proper adjustment, check the Deck Idler for worn or broken parts. See Figure 6.1.

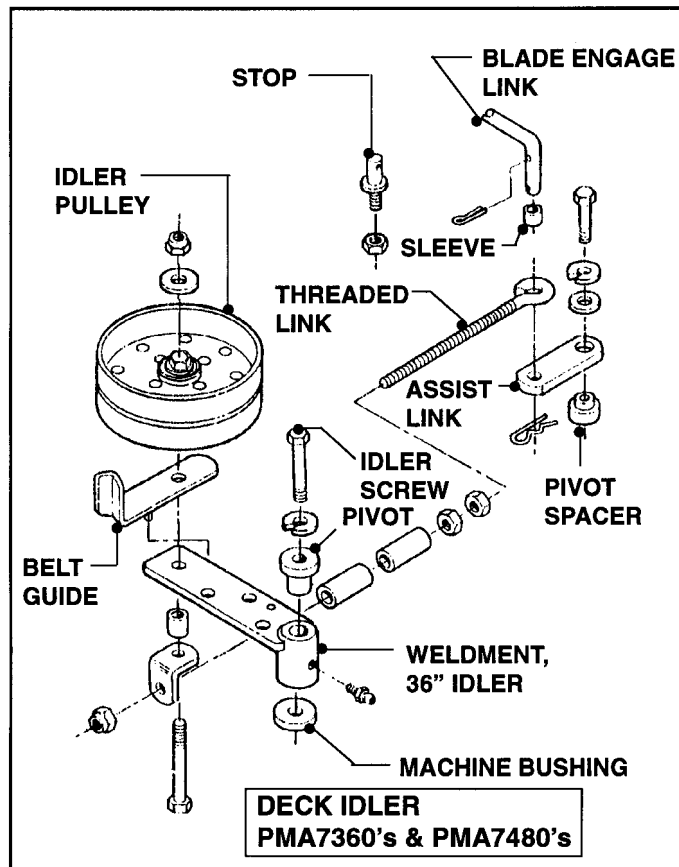


FIGURE 6.1

- A. IDLER PULLEY** - Move Idler away from Drive Belt and manually turn Pulley. Check for any looseness, wobble or "freezing" of Pulley. Replace as required.
- B. BELT GUIDE** - Check Drive Belt for any wear indicative of a loose Belt Guide. If wear is present, check the Retainer Tab on the bottom of the Belt Guide. If Tab is missing, replace Guide.

- C. WELDMENT, IDLER** - If the Weldment (Idler Arm) is loose, remove the Idler Nut and Screw and check the parts (Screw, Pivot, Weldment, Bushing) for wear. Replace any worn parts.
- D. THREADED LINK** - Inspect the "eye" of the Link and the Sleeve for wear. Replace if required.

### IMPORTANT

If it is hard to shift the Blade Control to the "ON" position, or it cannot be shifted at all, then check the "Eye" of the Threaded Link. If it is too tight, then use a screwdriver to open it up until operation is satisfactory.

- E. STOP(S)** - Inspect both Blade Stops for any signs of wear or looseness. If worn, loosen Stop and rotate 180°, then retighten. If loose, tighten. If either Stop is bent, it should be replaced.
- F. ASSIST LINK** - Check the Blade Assist Link for any wear on the sides and in the Pivot Points. If required, replace with new part.

## 6.3 BLADE BRAKE - PMA7360,PMA7361,PMA7362\* & PMA7480, PMA7481,PMA7482

If, after repeated adjustment, the Blade Brake does not stop the Mower Blades within 7 seconds, then check the Blade Brake Assembly for worn or broken parts. See Figure 6.2 & 6.3.

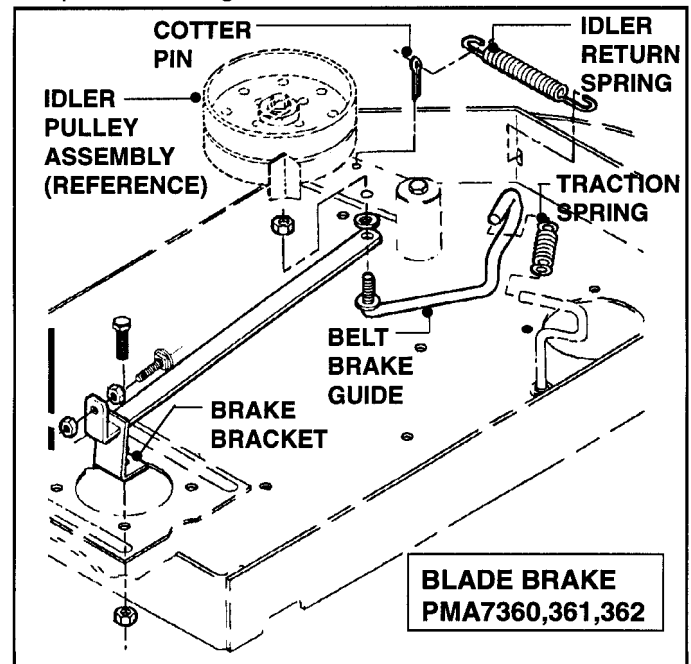


FIGURE 6.2

- A. SPRINGS** - Check for a loose or broken Traction Spring or Idler Return Spring. Replace if broken.
- B. COTTER PIN** - If the Idler Return Spring is loose from the Idler Assembly, replace the Cotter Pin.
- C. BRAKE BRACKET** - Inspect the Brake Bracket for looseness and wear. If loose, tighten. If worn, replace.

\* See Page 6.3, Figure 6.4.

## Section VI - DECK IDLER ASSEMBLIES & BLADE BRAKES

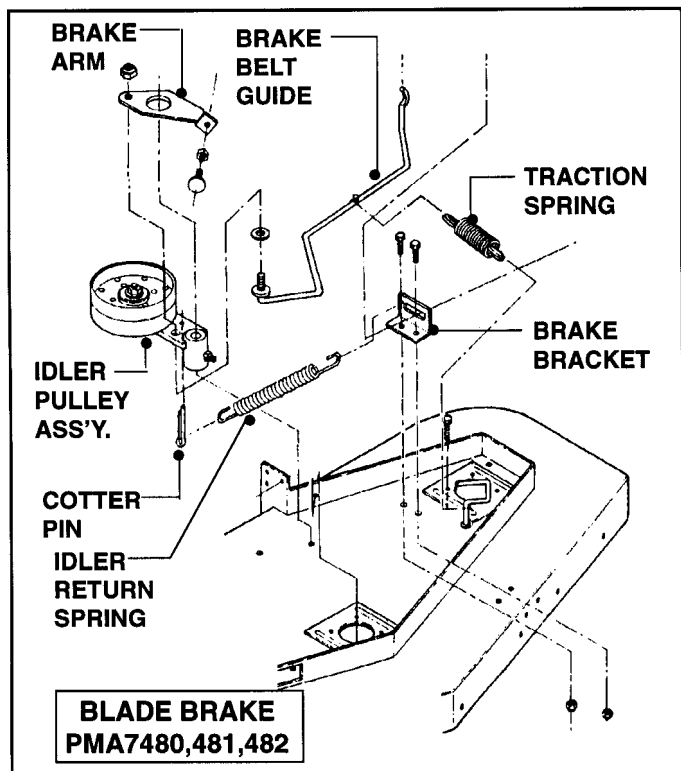


FIGURE 6.3

### 6.4 DECK BRAKE ARM - PMA7362

#### A. (Deck Brake Arm, Part No. 3-3453)

If the Deck Belt is running too low in the Brake Belt Guide, check to see if the Brake Arm is installed on top of the Idler Arm. If so, it is incorrectly installed. The nyloc nut should be removed and the Brake Arm installed on the Brake Belt Guide underneath the Idler Arm. The nut and washer can then be installed. See Figure 6.4.

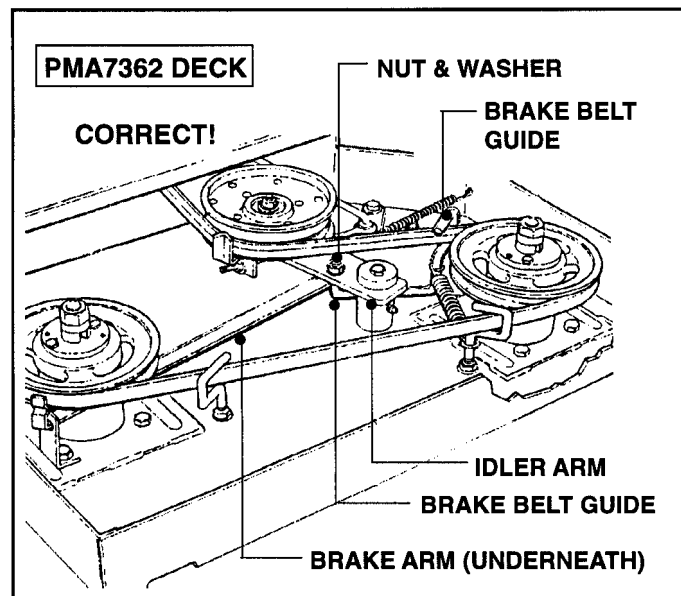


FIGURE 6.4

- B. After relocating Brake Arm as shown in Figure 6.3, start Engine and place Blade Drive in "ON" position and let it operate for a few seconds.
- C. Put Blade Drive in "OFF" position and check both Brake Guides to make sure that they are in contact with the Belt around both Spindle Pulleys. Adjust if required.

### 6.5 BLADE IDLER ASSEMBLY - PMA7480

Should the Blade Drive Belt on the 48" Deck continually lose its adjustment, or show signs of wear, then check the Idler for possible problems. See Figure 6.5.

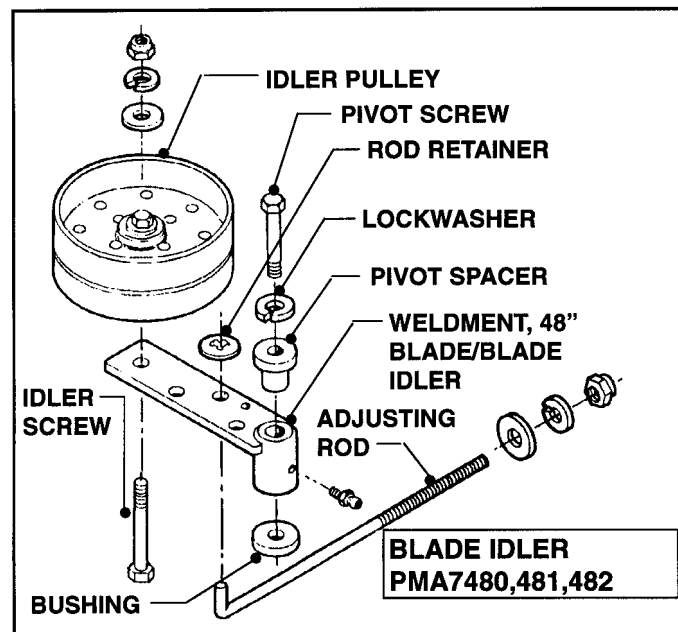


FIGURE 6.5

- A. **IDLER PULLEY** - Move Idler away from Blade Drive Belt and manually turn Pulley. Check for any looseness, wobble or "freezing" of Pulley. Replace as required.
- B. **WELDMENT, IDLER** - If the Weldment (Idler Arm) is loose, remove the Idler Nut and Screw and check the parts (Screw, Pivot, Weldment, Bushing) for wear. Replace any worn parts.
- C. **ADJUSTING ROD** - Check the Rod Retainer for tightness. Check rod-end for wear. Check thread condition. Replace rod as required.

# Section VI - DECK IDLER ASSEMBLIES & BLADE BRAKES

## 6.6 IDLER ASSEMBLY - PMA7364, PMA7484 & PMA7524

If the Mower Deck Belt will not maintain proper adjustment, check the Deck Idler for worn or broken parts. See Figure 6.6.

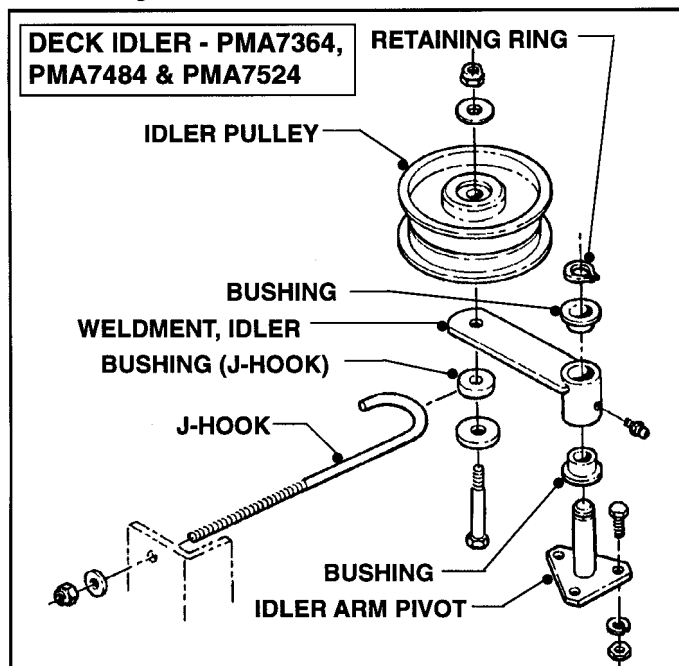


FIGURE 6.6

**A. IDLER PULLEY** - To check condition of Idler Pulley, loosen the Nyloc Nut on the end of the threaded "J" Hook, then move Idler away from Mower Deck Belt and manually turn Pulley. Check for any looseness, wobble or "freezing" of Pulley. Replace as required.

**B. WELDMENT, IDLER** - If the Weldment (Idler Arm) is loose, remove the top Retaining Ring and lift the Weldment off the Pivot Arm. Check the Bushings and Pivot Shaft for wear. Also, check the Idler Arm Pivot to make sure it is firmly attached to Deck. Replace any worn parts when reassembling.

**C. "J" HOOK & BUSHING** - Check the threaded portion of the "J" Hook for damage. Also, check the hooked end and bushing for wear. Replace parts as required.

### D. BLADE IDLER ASSEMBLY - PMA7484, & PMA7524

See "6.6 IDLER ASSEMBLY, etc., Steps A, B & C" for information on inspection and repair. See Figure 6.7.

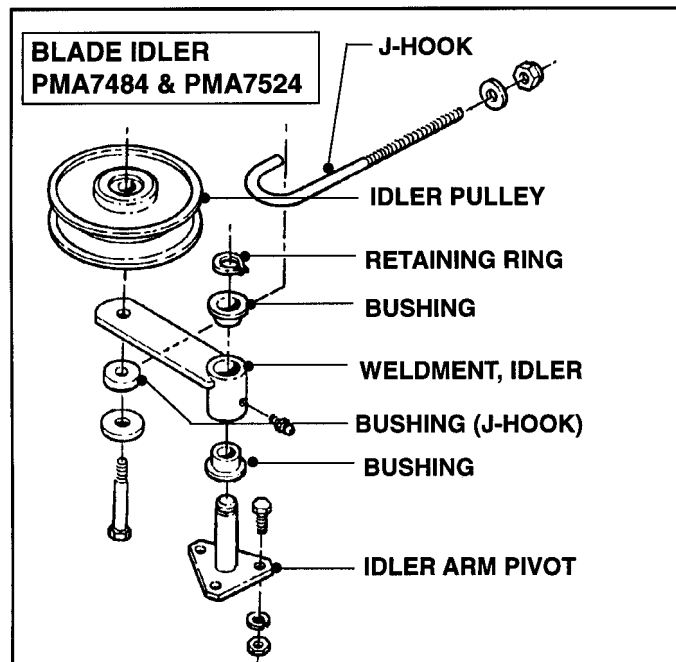


FIGURE 6.7

## 6.8 IDLER ASSEMBLY - SP320

These Idler Pulleys depend on a spring for proper belt tension. If the Mower Deck Belt will not maintain proper tension, first check the Spring for over-tensioning or breakage. If Spring is functioning properly, then check the Deck Idler for worn or broken parts. See Figure 6.8.

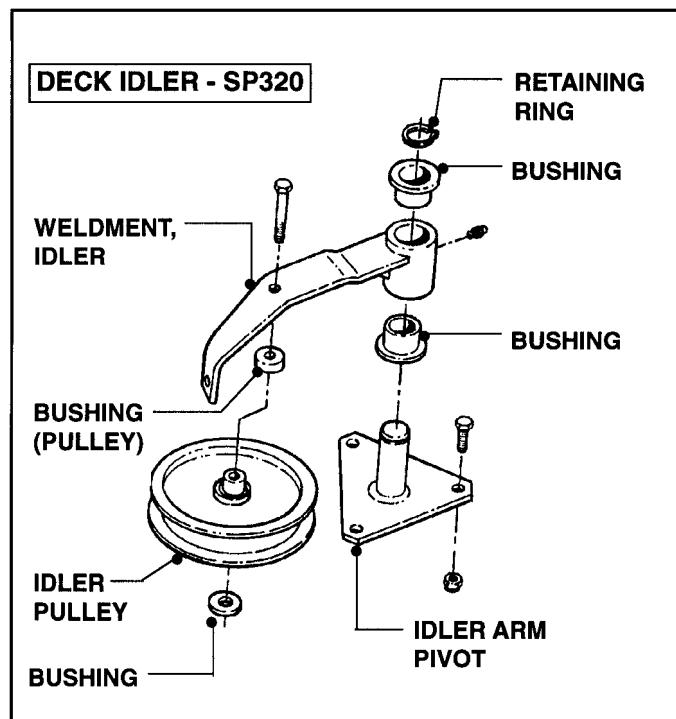


FIGURE 6.8

(Continued - A. & B. - on Page 6.5)



## Section VI - DECK IDLER ASSEMBLIES & BLADE BRAKES

**A. IDLER PULLEY** - Move Idler away from Drive Belt and manually turn Pulley. Check for any looseness, wobble or "freezing" of Pulley. Replace as required. Refer to Figure 6.8.

**B. WELDMENT, IDLER** - If the Weldment (Idler Arm) is loose, remove the Idler Nut and Screw and check the parts (Screw, Pivot, Weldment, Bushing) for wear. Replace any worn parts.

### 6.9 IDLER ASSEMBLY - SP360 & SPA360

See 6.8, A. & B. (at top of this page) for information which covers this Idler Assembly also. See Figure 6.9.

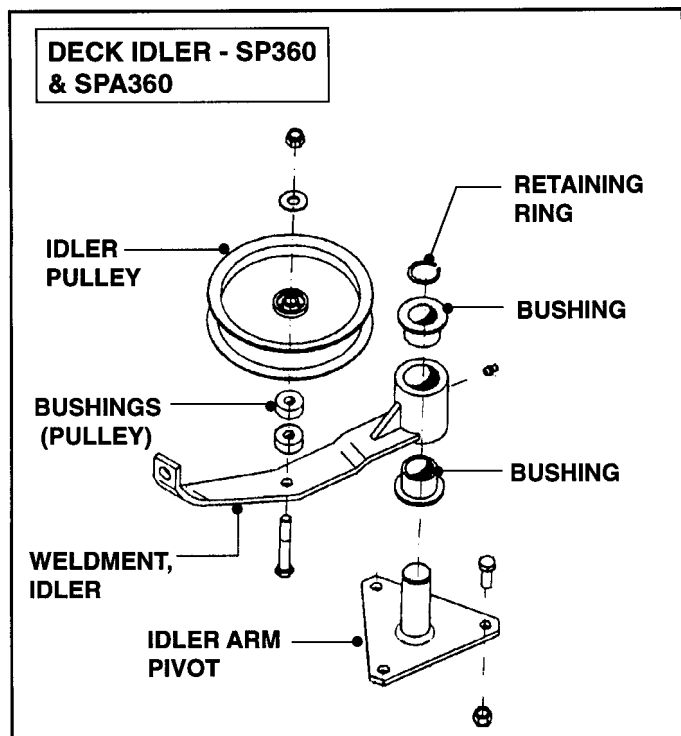


FIGURE 6.9

### 6.10 BLADE & DECK IDLER ASSEMBLY - SP480, SPA480, SPA520 & SPA610

See 6.8, A. & B. for information which also covers this Blade/Blade & Idler Assembly. See Figure 6.10.

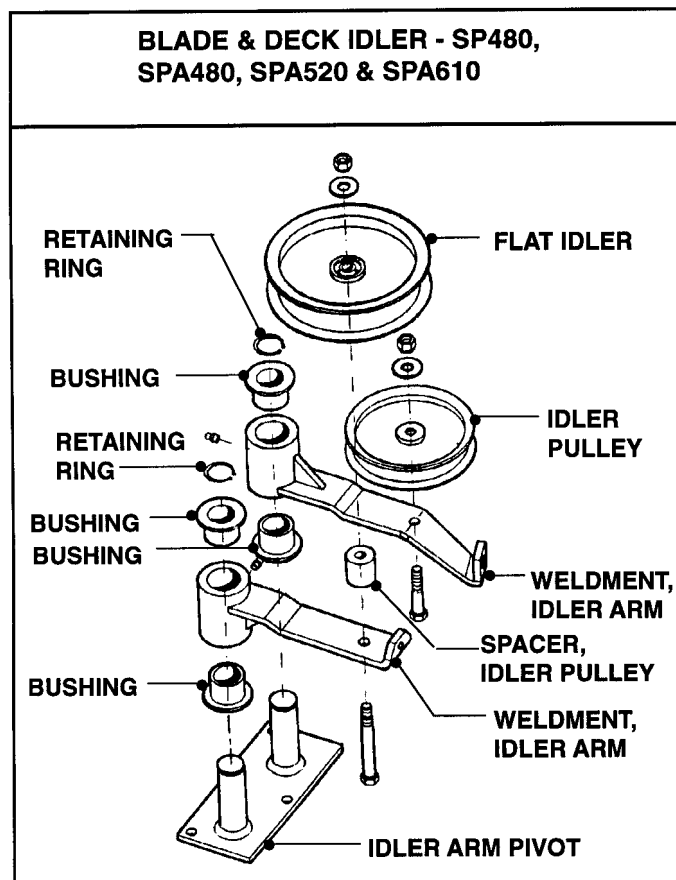


FIGURE 6.10

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

*Service Manual for*

# ***SNAPPER***®

## ***PRO MOWER UNITS***

### ***Series 0 thru Series 4***



**WARNING:**

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

# ***SNAPPER***®

**McDonough, GA., 30253 U.S.A.**

COPYRIGHT © 1999  
SNAPPER INC.  
ALL RIGHTS RESERVED

**MANUAL No. 07223 (I.R. 11/98)**

**PRINTED IN U.S.A.**